

SCHOLASTIC COACH

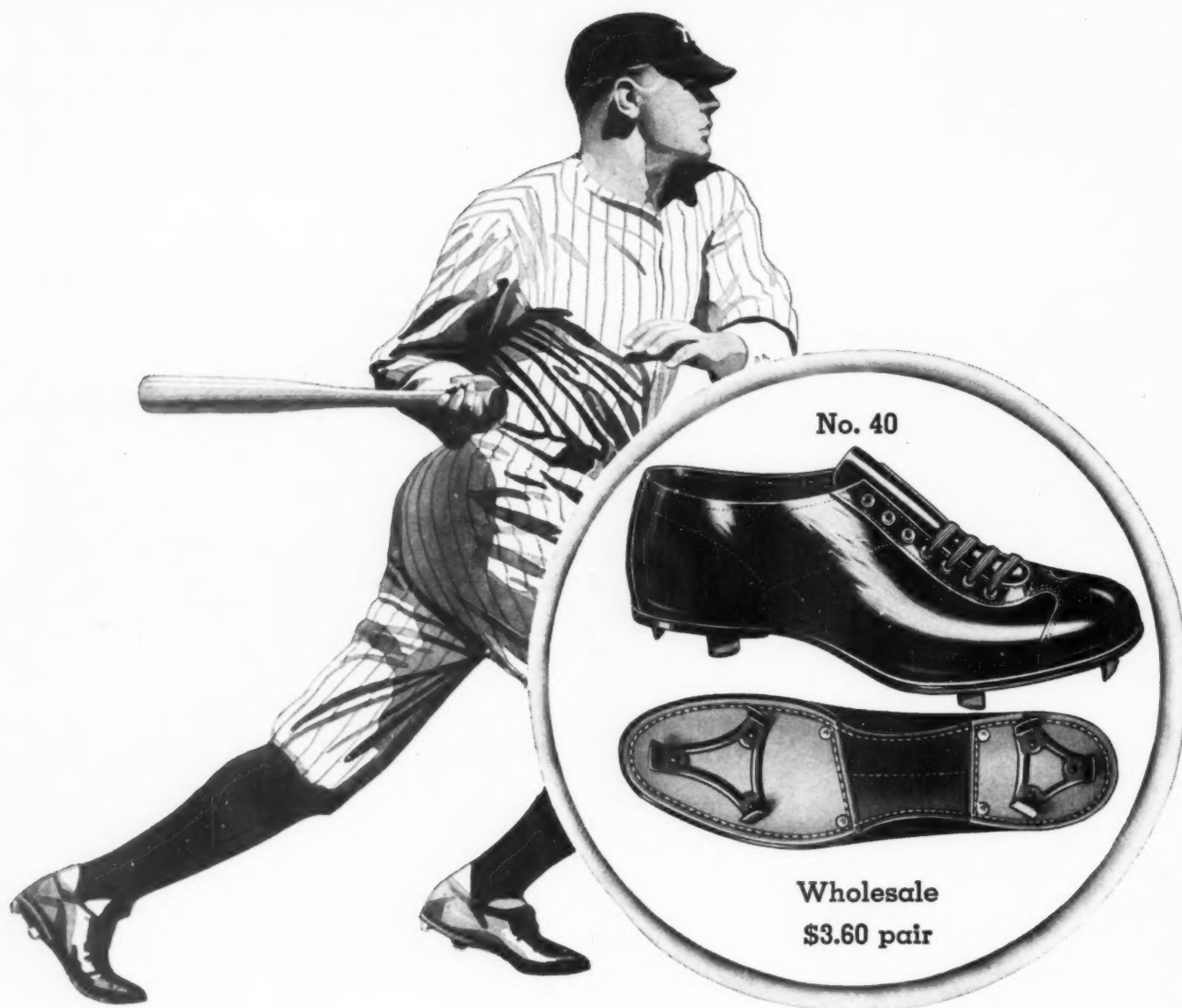
JANUARY

1935

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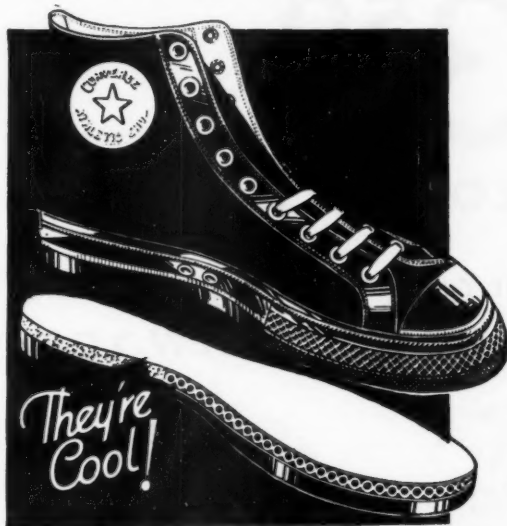
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VOL. 4 No. 5

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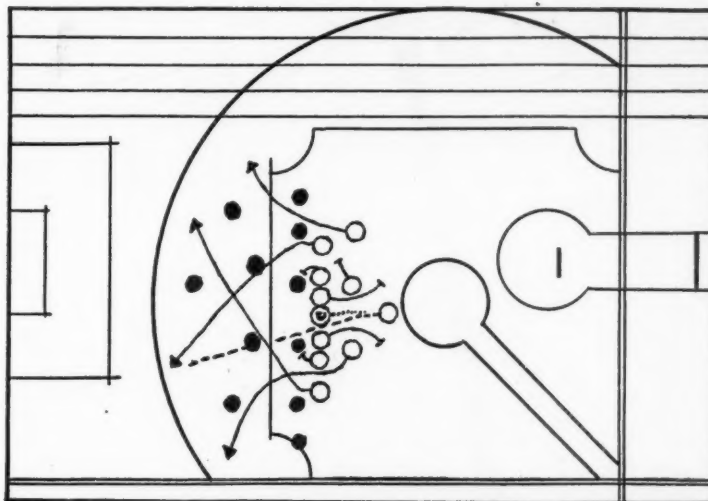
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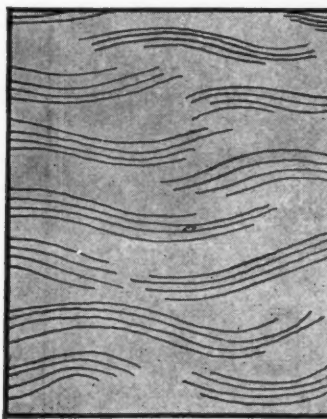
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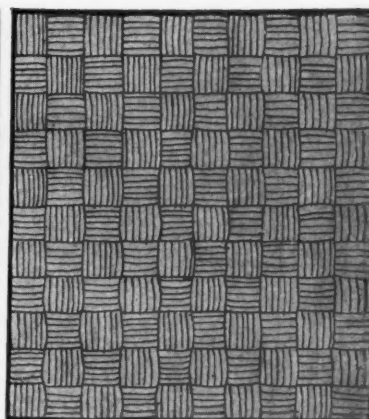
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COACH'S DIAGRAM ... for basketball, baseball, football, hockey and track ...



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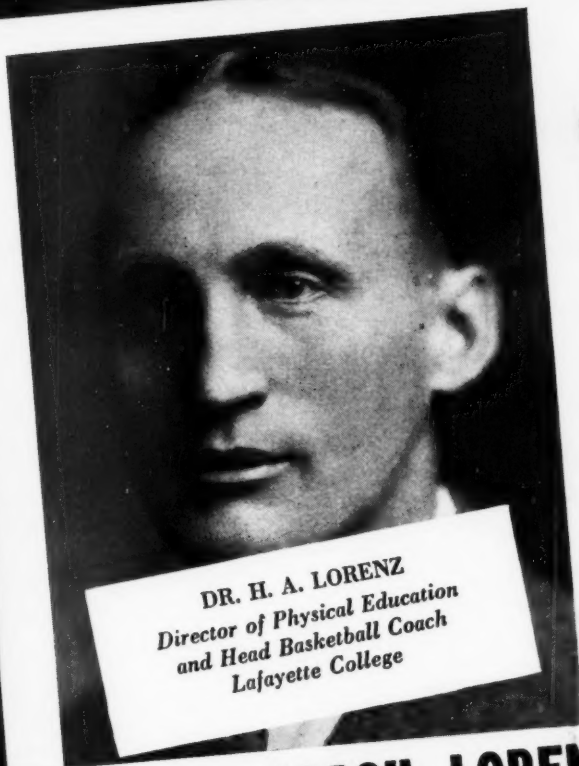
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SC-52

BULLETIN



DR. H. A. LORENZ
Director of Physical Education
and Head Basketball Coach
Lafayette College



COACH LORENZ'S RULES OF POSTURE TO HELP BUILD BODY ENERGY

Good posture is a reflection of positive good health and vigor

POINTS IN GOOD POSTURE:

- 1 Good posture is a health habit and is achieved through practice. This involves mental as well as physical poise.
- 2 Proper diet aids sound growth which is an essential of good posture.
- 3 Develop skill, strength, and general body tone through play and exercise.
- 4 Correction of growth defects; such as flat feet.
- 5 Get plenty of sleep and rest. Use a moderately low pillow.
- 6 Keep the head up, chin in, abdomen in.
- 7 Avoid exaggerated "bantam" posture, such as puffed out chest and chucked in chin.
- 8 Special exercise for posture defects should be undertaken under the direction of an expert.
- 9 Good posture insures pride in personal appearance.
- 10 You are judged as you are observed.



EAT SHREDDED WHEAT FOR HEALTH AND ENERGY

No. 10 of a series of posters issued
in the interest of good health by

SHREDDED WHEAT

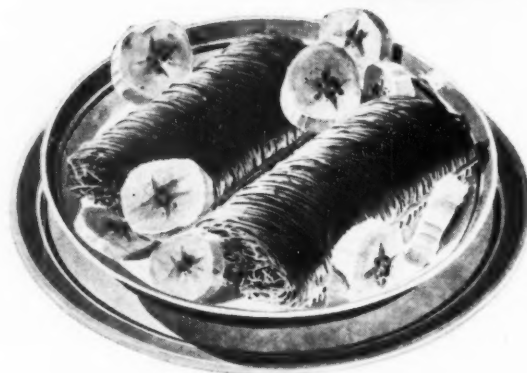
Coach—HERE'S ONE WAY TO KEEP YOUR HAND IN EVERY PLAY



Hand your players the habit of eating Shredded Wheat, along with your other daily diet rules. It's one sure way to keep your hand in every play. For Shredded Wheat is a star energy producer — and perfect conditioning supplies the extra punch that puts over your smart plays and shrewd game strategy.

Hundreds of coaches have discovered that Shredded Wheat, fresh fruit and milk pay scoring dividends. It's 100% whole wheat—nothing added, nothing taken away. And it contains the most perfect balance of Nature's vital health elements—bran, mineral salts, calcium, carbohydrates, proteins, vitamins, phosphorous and iron!

Start recommending crisp, delicious Shredded Wheat now. Keep your hand in every play by building stamina that lasts right through the toughest game.



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ON THE OTHER SIDE OF THIS PAGE IS A POSTER FOR
YOUR BULLETIN BOARD . . . NO. 10 OF A SERIES. IF YOU'D
LIKE EXTRA COPIES FREE FOR GYM AND ASSEMBLY HALL,
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EDUCATIONAL DEPT., 449 WEST 14th ST., NEW YORK CITY.



THE year 1935 marks the three-hundredth anniversary of the birth of secondary education in the United States with the founding of the Boston Latin School in 1635. The Department of Secondary-School Principals of the National Education Association is observing this anniversary by a nation-wide celebration* to which every high school should make a contribution by staging a local celebration.

Here is the cue for your physical education and athletics department to come forward with a public dramatization of what the modern program of health and physical education consists of, and what your school is doing in particular. Do not let this opportunity pass by. Sometime between now and the close of school in June your school should arrange for its local celebration, and your department should be right in there leading the show. Start planning now. Stage a pageant or a demonstration that will give the citizens of your community an impressive picture of the contribution your department is making toward the health and training of all students.

Some suggestions for a pageant in your gymnasium or presentation on your stage: A parade of all sports groups and physical education classes in their uniforms. Scene showing student getting physical examination and taking several of the physical performance tests. (Keep all scenes short and have them follow as quickly as possible one after the other. Give the production *pace*.) Scene showing class listening to lecture on hygiene. Scenes showing episodes from practice sessions of various sports (players in uniform). Demonstration of the dance.

*Scholastic, the National High School Weekly, has been designated by the Department of Secondary-School Principals, to publish the official book of the celebration. A section on physical education, containing many fine photographs, will be a feature of this book. The book will be issued February 23, and should be ordered in advance. Write Scholastic, Chamber of Commerce Building, Pittsburgh, Pennsylvania. The price is 50 cents.

HERE BELOW

1635 to 1935 — An anniversary which is the occasion for a national high school celebration — An opportunity for your department

Opportunity here to have various nationality groups do folk dances. This was done with fine effect by Cleveland school children last spring in the pageant they gave before the convention of the American Physical Education Association. This pageant, called "Olympia Through the Ages," showed the development of sports and physical expression from the original Greek Olympic festivals up to modern times. Brief exhibitions of tumbling, gymnastics, boxing, fencing, wrestling may be included. All the carry-over sports — tennis, golf, archery, swimming, etc. — should be represented.

One of the most entertaining episodes in the Cleveland production was one called "The Gay Nineties." Done in costume, this episode presented roller skaters, cyclists on big-wheelers, an old gym drill, a bathing party (with imitation water), and even an "auto" party in an early "horseless carriage."

The humorous note can always be injected by dressing the boys and girls as adults in costumes of yesteryear. Have a class of girls perform in the gymnasium costume of not so long ago — bloomers, middy-blouse and black stockings. A wand drill would go well with this outfit.

He who laughs last

The Gay Nineties may have their laugh on us, too, if they wish. We thought that the *reductio ad absurdum* of football hoopla had been reached long ago, but a photograph reached our desk the other day which made us feel that our twentieth century concept of values had just lost half the distance to the goal. The photograph (see cut) shows the mothers of University of Southern California football players lined up "for an informal practice prior to being the guests of honor at a banquet tendered by Trojan alumni," according to the caption by International News Photos, Los Angeles Bureau. "Their 'unbalanced line' reads from left to right, in the respective positions of their sons: Mrs. (Bob) Fuhrer, Mrs. (Bob) Matthews, Mrs. (Jim) Rorison, Mrs. (George) McNeish (with ball), Mrs. (Herb) Tasch, Mrs. (Jed) Ostling. In the backfield: Mrs. (Cal) Clemens, Mrs. (Inky) Wotkins, Mrs. (Bill) Howard and Mrs. (Paul) Wing."

Motherhood is a wonderful thing, but football, it seems, is more wonderful still.

Olympic note

When the Olympic Games were held in Los Angeles in 1932 two typically American games—baseball and basketball—were not on the program; not even as exhibitions. For the Olympic Games in Germany in 1936 both baseball and basketball are on the program, the latter in open competition. Dr. Forrest C. Allen of the University of Kansas, is largely responsible for getting basketball this recognition. His efforts toward this end may win him the appointment as coach of the team.



FOOTBALL MOTHERS

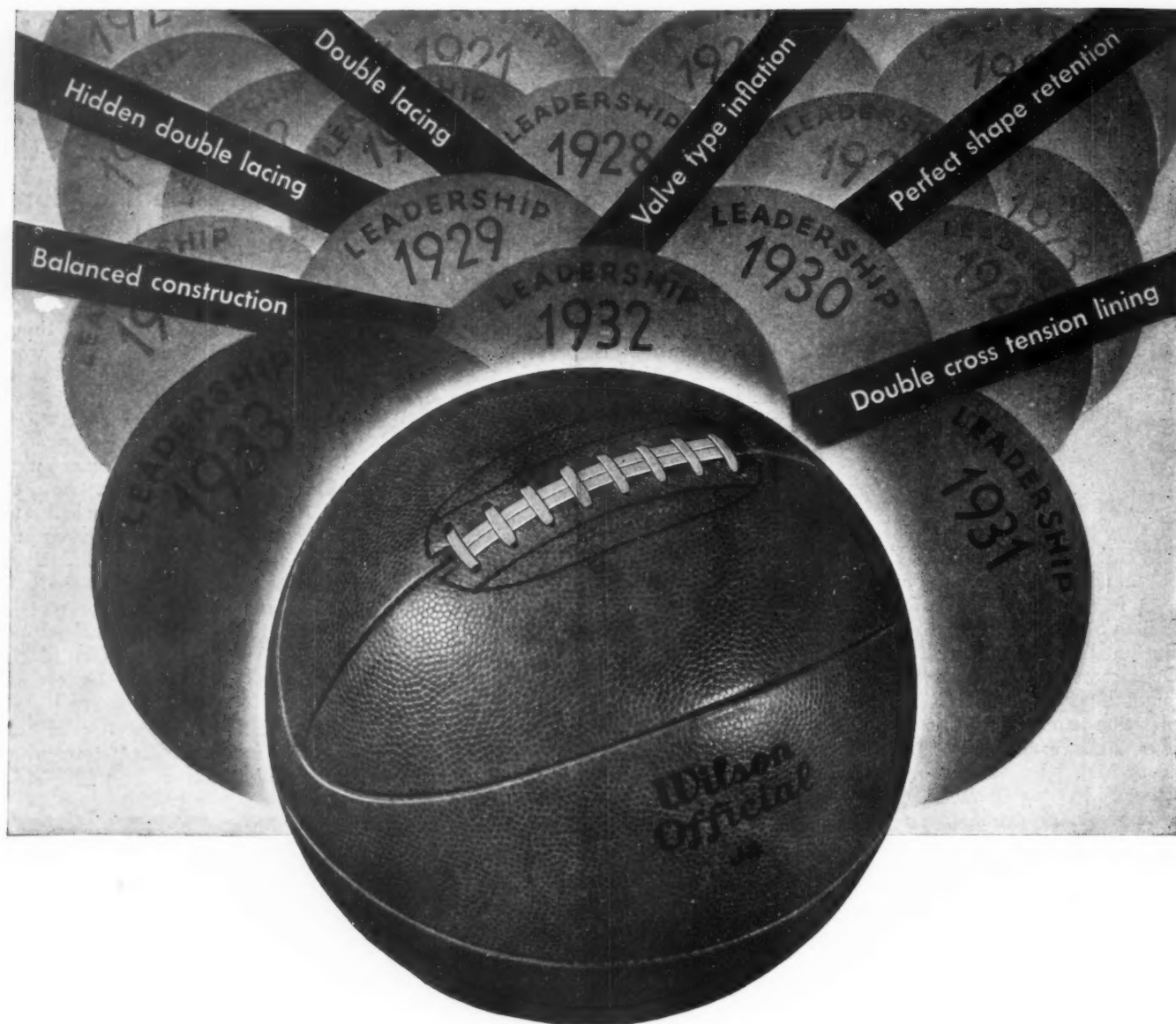
The job of getting amateur baseball sufficiently organized to permit the selection of the best team for a tour of Japan next summer and the Olympic trip the following summer, has been put in the hands of professional baseballers Max Carey, Leslie Mann and Jimmy Foxx.

INTERSECTIONAL HIGH SCHOOL FOOTBALL SCORES

At Miami, Fla., December 8—	
Marblehead, Mass., High School.....	52
Miami Edison High School.....	12
At Petersburg, Va., December 8—	
Baldwin, N. Y., High School.....	12
Petersburg High School.....	12
At Miami, Fla., December 25—	
Scott High of N. Braddock, Pa.....	26
Miami Central	13

ROLL OF HONOR

For refusing to give permission to the James Madison High School football team to play in Miami, Fla., on December 25, we nominate the Public Schools Athletic League Games Committee (New York City) to the 1934 Roll of Honor, High School Division.

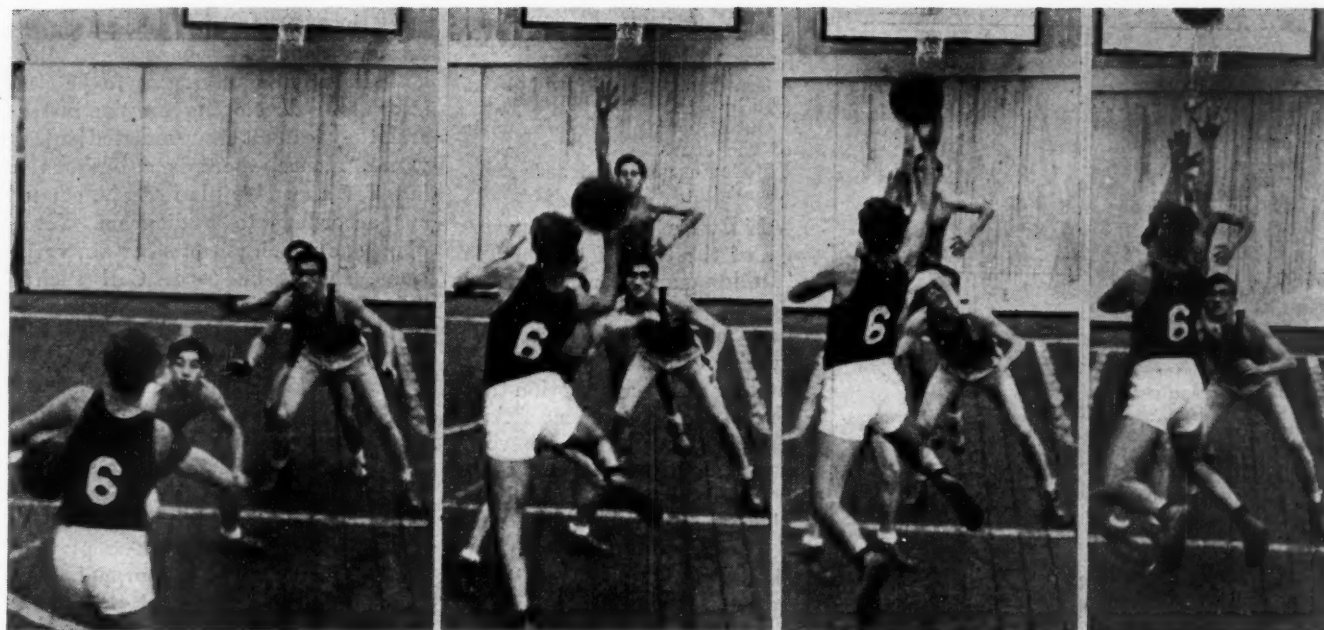


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Wilson basketballs were the first items which gave to the Wilson organization recognition as manufacturers of superior sports equipment. Since that date they have constantly led the field and have actually given to the game improvements which have been responsible for developments of the game itself. Wilson basketballs have been pacemakers by which the rest of the industry has forced the timing of its stride.

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BUILDING AN OFFENSE

By William H. Anderson

This is the second of two articles by the coach of the Lower Merion High School (Ardmore, Penna.) basketball teams. Mr. Anderson's first article, in the December issue, was on the details of passing and shooting.

A BASKETBALL team's success depends largely upon the strength of its offense. Regardless of how good a defense it may have, the team must be able to score baskets to win games. These are obvious things to say, but after one has seen so many teams with excellent defenses fail to capitalize on their interceptions by methods of attack well disciplined and capable of taking advantage of the opponents' weaknesses, it is only natural to wonder whether some coaches are reversing the old basketball saying to make it read: "The best offense is a good defense."

Indeed it is not. An offense is an offense and a defense is a defense, and the twain should not be mixed up so that they seem to be one. Develop an offense and develop a defense. You are bound to lose possession of the ball a considerable part of the time, and when you do you may call it whatever you choose, but to the practical-minded it is known as defense.

How much should be planned?

Is it necessary to build an offense: that is, to have a plan of attack? Why not have every practise session consist of passing and shooting drills, topped off with a scrimmage between Team A and Team B, with the players of each team meeting situations as they develop? I have often heard professional teams cited as wonderful exam-

ples of what a team can do when each of the five men goes out and simply "uses his head" without any team plan to guide him. It is erroneous to suppose that a really first class professional team plays an individualistic game, each player acting without regard to the movement of his teammates, utterly without team planning.

A first class, highly experienced team, amateur or professional, is full of plans. And they have to keep them pretty well concealed by feints and subterfuge, because the opposition is also smart in the ways of the game and no mere, ordinary, individualistic playing is going to get very far with them. Perhaps this is the reason many people believe that professional teams have no plan of attack, their plans being so cleverly concealed, and carried out with such a fine economy of movement, that they are lost sight of.

Take any five first class basketball players, with some reserve players. Suppose that none of these players have ever seen each other before. Give this team a season's schedule to play. They are first class players. They have no coach as such, but they have a manager or a boss, or whatever you want to call him. He may be one of the players, like Nat Holman with the New York Celtics. Will this team play planned basketball? If it is their intention to win games over worthy opponents they will certainly develop a plan. Players like these who travel together and see considerably of each other are always planning. If they know anything about the team they are going to meet next, they have it all worked out as to what they are

going to do to take advantage of the other team's weaknesses, and how they are going to put a crimp in their style. What they ask about an opposing team is what every coach of every basketball team likes to know about a team he is to meet: What kind of floor have they? How tall is their center and can he do anything besides get the tap? What kind of defense do they usually start with? Do they change style of team defense to meet different situations? Who are their ace shooters? Are they ambidextrous in shooting? How do they go to work to penetrate various types of defenses? Which defense seems to give them the most trouble? What do they do on center jump and held balls (a) when they are likely to control the tap (b) when it is uncertain, (c) when they are likely to lose the tap? What do they attempt to do on their out-of-bounds ball in their own scoring area?

Situations to plan for

Here, in these questions, is an index to what an offense consists of. Your offense should include plans for taking care of every situation that commonly occurs when your team has the ball. These are *general* plans, and each *general* plan allows plenty of freedom for individual action and choice within it. In some cases individual responsibility can be very definitely fixed. The various divisions of offense which call for *general* plans are:

Getting the ball off the opponents' backboard and clearing it from the jam.

The break for your scoring area before the opposition sets its defense.

SCREENS & WEAVING

Diagram 1

D passes to pivot man who immediately returns pass to E. D cuts fast around A who comes out to form screen for him. E passes to D cutting. Good play when opposing guards are not staying back and are tagging offense closely.

Diagram 2

B cuts from corner or side, taking looping pass from D. If B is ahead of his guard he shoots from right hand side. If guarded he stops quickly, hoping to get guard to run past him and thus open up opposite side for dribble or left side shot. (See action photographs, pages 16, 17 for example of this stop.) If B is stopped from dribbling or shooting he should try to get pass to C or A cutting past.

Diagram 3

D passes diagonally to C, and cuts ahead of E in following the pass. C quick-passes to B coming out of the corner. B passes to A coming from the opposite corner to the foul line. A passes to either C or E cutting for the basket.

Diagram 4

E passes to D and cuts ahead of him. D passes to C who passes to A cutting for the foul line. C cuts slowly for the basket. As C goes by, B swings around him on a quick break for the basket, taking pass from A. There are several alternative passes.

OUT-OF-BOUNDS PLAYS

Diagram 5

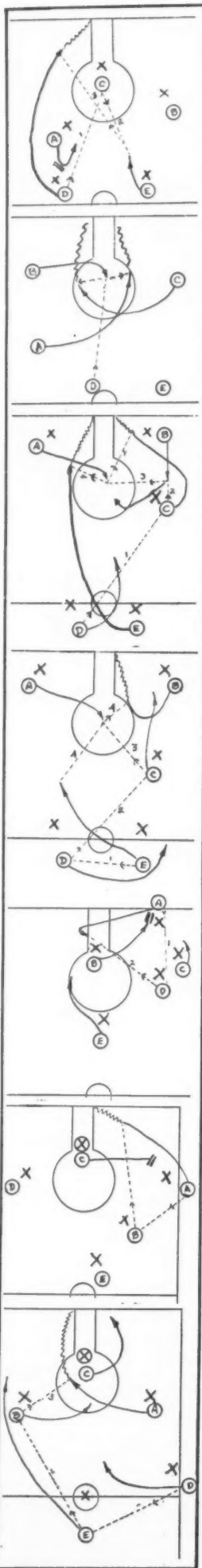
B cuts for pass from A, but pass goes to D. B screens for A who cuts in fast to opposite side of basket. D passes to A for a quick shot. A should be a good spot shooter.

Diagram 6

C cuts toward A and screens for him, as A passes to B and cuts for basket to receive return pass.

Diagram 7

D passes to E who passes to B coming out to meet pass. B in turn hook-passes to A cutting around pivot man.



What to do if the opposition defense is in position. (All types of defenses.)

Center taps and held balls. (All hypotheses.)

Out of bounds balls in all parts of the court.

Follow-up of own team's shots. Freezing the ball.

If I were to fulfill the promise of the title of this article "Building an Offense" I would deal at length, as a preliminary, on "choosing your players." I can see many readers smiling at my assumption that they have much choice. And those readers who do have a wide choice are no doubt familiar with the usual advice about "speed and fight are essential," "do not choose a boy simply because he can hit the basket," "the center who gets the tap but nothing else may be not nearly so valuable as the smaller man who gets everything else—you can plan to lose the tap but get the ball," "a good head on a forward will often offset physical slowness," "some boys who are not naturally fast get uncovered because they are tricky and time perfectly just when to start."

We spoke of a *general* plan for each of the divisions of offensive play. All coaches will agree that these divisions, or situations, have to be taken care of, but there is considerable disagreement as to how *specific* in details the coach should be instructing his team in handling these situations as they arise.

For instance, take the first situation—getting the ball off the opponents' board. Most coaches like to have at least one tall, strapping and scrapping guard, who is also fast and "in there thinking," to handle the bulk of these rebounds. Yet there is no coach I know of who would command this one fellow to get everything off that board, while his four teammates have no responsibility whatever for these rebounds.

And so it goes for every situation: if one particular course is charted out as the *recommended* course, there

must be alternatives which can be seized instantly and made use of. Basketball is that kind of game: the situations are developing on the instant and they cannot be predicted in advance. Hence, there is a limit as to how far a *specific* plan can be carried out according to a diagram. Yet a plan, one which permits certain variations, should be used. Call such a "plan with variations" a "system" if you wish.

It has been my experience that high school teams should have a well worked-out system of offense, calling for the movement of players to certain areas under certain situations and conditions, if for no other reason than to prevent their becoming careless, haphazard and wild in their playing. A team with apparent organization, that seems to know what it is doing as a team, will also look good in defeat, if the two teams are anywhere near each other's class.

At Lower Merion we have used a system which calls for both a fast break (as when we recover from the opponents' bankboard) and a slow break (as when we have the ball out of bounds).

The question as to which is the better system—the set style with plays or the style depending on the players to find their own way out—remains a question. We compromise by having plays with alternatives at every stage, and practicing them until they become "the way of playing" for the players. There is no shortage of

plays. There are dozens of books on basketball with hundreds of plays, and there is perhaps no play today that is being used this season for the first time. With this article I have diagrammed a number of plays which we have used, all with considerable success. You may find some of your plays among them, or perhaps your neighbor's plays. A play on a piece of paper is like a musical instrument at rest. It won't produce very much without the artist. The better artists you have

(give them technique by being thorough with them in their work on fundamentals) the better plays you will see.

The transition from offense to defense or from defense to offense is a most important problem for basket-



HELD BALL PLAY

Diagram 8

B taps ball forward to C who returns the ball to D. A moves over in front of E, who cuts around the screen to receive a long pass from E. C may pass to E cutting instead of returning ball to D. If opponents guarding A and E switch successfully, E should turn back to basket and come out to meet pass, and become pivot man.

OFFENSIVE WEAVE USED BY MANY PRO- FESSIONAL TEAMS

Diagram 9

D passes to E and cuts through for return pass. Not receiving it, he turns toward near side-line and comes out to position shown in Diagram 10.

Diagram 10

E, now in possession of ball after pass from D, passes to C and cuts diagonally across front-court as shown by arrow, going to area vacated by A who moves out. As E cuts he should expect return pass from C.

Diagram 11

C passes to B who has moved up for the pass. C cuts diagonally across court, looking for return pass.

Diagram 12

A, who has moved up in the rotation, receives pass from B, who breaks on a diagonal and receives return pass well out, and dribbles toward his basket. If he is ahead of his man he goes in for a shot; if not he stops and turns toward sideline and gives pass to E cutting behind.

Diagram 13

A variation of Diagram 12—A, instead of returning pass to B, passes to D coming out. A follows pass and as he passes D, D cuts behind him for dribble-in. If defense checks D, he should stop, pivot and pass to E or back-pass to C who is moving out for safety.

ball teams. Your team must be ready to sense this change in order not to be caught napping either in going on offense or on defense.

In recovering the ball off the opponents' board, the guards and center particularly should have the knack of going up high to recover. I might say here that size is not the most important factor in recovering these shots. Timing of the jump is by far the most important. We have had small guards who could take the ball away from big forwards and centers, for they had that natural knack of meeting the ball high in the air as it was about to drop. Most players are impatient and will jump too soon with the result that they are coming down as the

ball descends, instead of going up to meet it. All players should be drilled in taking the ball off the board and getting it free from the jam under the basket. The most satisfactory way of doing this is to have the players land with their legs well spread and knees slightly bent so that they will be in position to execute a turn towards the sideline and dribble out as fast as possible in order to make a pass to a man at the center of the floor. The whole team must sense this recovery and the front men break fast for their basket, hoping to get a pass from a teammate before the opponents can get back on defense. If the ball is dribbled out to the sideline by a guard, the forward on that side can cut for the middle of the floor, receive a pass from the guard at the sideline, and in turn whip a pass to the opposite forward who either cuts straight for the basket or crosses over in front of the basket to receive this pass. If the forward is covered, the pass from the sideline forward can go to the center or guard who is breaking down the center of the court; the center can dribble on in or pass the ball to the other forward who will, of course, be ahead of him. In case this is not working, or the sideline forward cannot pass either to the center or other forward, he can return the pass to the guard who passed to him, who can in turn dribble down the floor all the way if the court is small, or pass to

either the center or forward, on the regulation floor.

If the center takes the ball off the board the guard on the opposite side from where he recovers the ball takes his place in breaking down the center, to receive a pass. On small floors the recovering guard, after he dribbles out, can sometimes pass direct to the cutting forward, but on long floors it is almost always necessary to have a middle man receive this pass.

Now, of course, a fast break like this is sometimes dangerous if you do not have good ball handlers, for the

passes may be intercepted or the ball be thrown away, and then your most precious possession has been lost. It is good, however, for your team to have enough confidence in themselves to use this type of offense where occasion arises. Sometimes you will get the overly cautious player who at times will pass up an opportunity to make a long pass to a teammate, but in the long run, remember these players are usually dependable and do not become the wild-passing type that we run into on so many high school teams. I believe it is much better to drill firmly on possession of the ball, and if you pass be more than reasonably sure that your teammate will get the pass, that it will not go wide, and that it will not be intercepted. Now if for some reason the opponents are clever on defense and get back before your team can get the ball safely down the floor another plan must be used to try to open that defense to get the ball through for a safe shot.

Out-of-bounds alignments

In receiving the ball from out of bounds the offensive players should immediately take their assigned positions on the floor. There are many so-called alignments, but I will discuss two of the most prominent used by the majority of the teams I have seen. The first set-up is with a man on the pivot and two men at the sidelines somewhat ahead [Concluded on page 28]

PLAYS AGAINST ZONE DEFENSE

Diagram 14

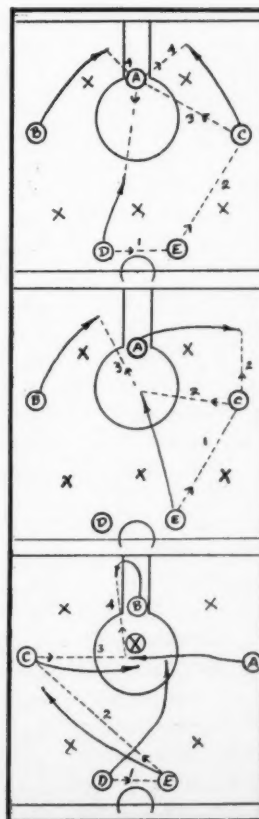
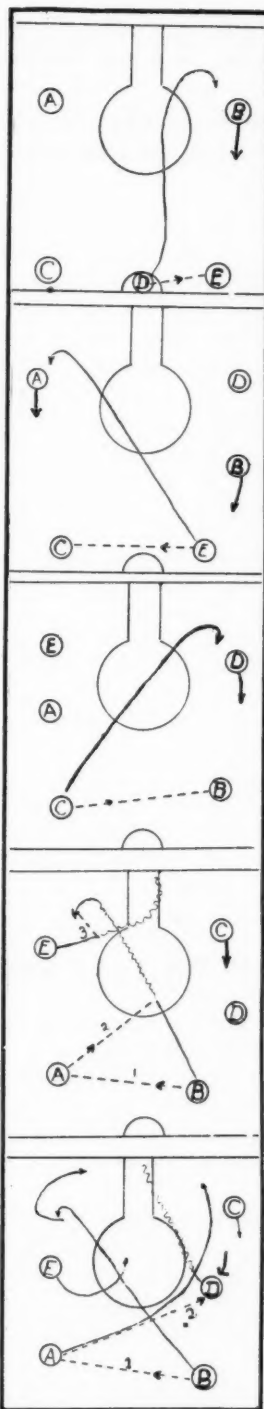
D and E pass ball rapidly between them to get front defensive line shifting. Ball is then fed to either B or C at the side, who may get an easy angle shot. If guards rush B or C, they pass to A midway between basket and foul line.

Diagram 15

E passes to C who either returns pass to E going through for dribble or to A moving toward sideline. A may return pass to E who moves up between two lines of defense.

Diagram 16

Against 2-1-2 zone defense—D passes to E and cuts in front of him. E passes to C on side who should shoot if clear, or cross-pass to A coming to meet the pass near foul line. A may hook pass to B on a cut under basket and reverse, as B's arrow shows.



CARE OF AN OUTDOOR ICE HOCKEY RINK

By Westcott E. S. Moulton

How a number of schools solve the problem of the melting of the ice along the boards

Mr. Moulton is director of athletics and coach of ice hockey at the Pomfret School in Connecticut.

ONE of the most difficult problems in the care of an outdoor hockey rink is to keep the ice from melting along the boards during the heat of the day. It is interesting to find that almost every school or college has evolved a different method of dealing with this problem. Many experiments have been tried, some successful according to the location of the school, and others with only partial success. I have investigated the conditions and methods used at the major hockey schools and colleges in New England, the birthplace of American hockey, and report on them here with the hope that they may be of some service to others interested in improving their outdoor hockey rinks.

One of the best methods of limiting the amount of melting along the boards is, if possible, to lay out the rink so that the noonday sun plays against only one end of the rink rather than against one whole side. It is surprising how this will eliminate a great deal of the melting. Along with laying out the rink in this fashion one school has found further protection by shoveling snow on the ice on the exposed end of the rink with a coating deep enough so that the sun will not be able to melt it during the day. The snow is cleared off just before practice. Of course, snow is not always available.

Some schools paint their boards white so that they will not absorb and reflect the sun's heat, but most schools leave the boards their natural wood color, and this seems to work just as well, although the white boards improve the appearance of the rink.

One school experimented with the placing of a close mesh heavy wire screen along the bottom six inches of their rink boards on the sides where the sun shines, thus allowing the cold air to circulate under the boards and across the ice. This is perhaps one of the best methods, and also one of the most expensive.

One of the best plans, considering the saving in money, time and labor, is that of placing a line of one-inch holes pierced through the boards just above the ice. The damage done by reflection of the sun is lessened considerably because of the circulation of

the air across the ice. This is inexpensive, and there is no upkeep.

What would seem to be a good method is to push the boards back from the rink every afternoon after the practice. The weakness of this is that in most cases the boards are securely bolted together and to get them apart and put them together the next day would take too much time. Another difficulty is that if the boards are not kept in the same place and allowed to set firmly, they will blow all over the ice during a high wind.

A satisfactory method, but one involving considerable work and time, is that of having the boards along the sunny side of the rink on hinges so that during the heat of the noonday these boards can be lowered to avoid the reflection of the sun. This plan is used at one of the larger schools in New England with great success, and if carefully carried out, will result in an excellent hockey rink.

One of the greatest aids in keeping fast ice on a hockey rink is to sweep off the ice surface after each daily practice. Especially is this true in the schools in southern New England, New York, New Jersey, and other sections of the country where the cold is not severe or sustained. If the ice is merely scraped with the usual shovels or scoops a tiny deposit of snow remains. This melts in the noonday sun and results in a soft surface, which may then freeze again and cause a rough surface. The majority of schools sweep off their rinks after each practice, using for this purpose a wide variety of brooms. The common house broom is the poorest of these because it sweeps a minimum of space and does not last any length of time. Some broom companies put out a broom about the same size and shape as this house broom but made of stronger straw and bound more se-

[Concluded on page 32]

THE PHOTOGRAPHS ON THE OPPOSITE PAGE

Goalie's stance. This is a perfect example of the correct stance for a goal guard. The stick is grasped in the left hand with the bottom edge of the blade flush with the ice. In this position the goalie can cover with his stick the opening on the left side of the cage as well as a flat shot on the ice. His right arm and hand cover the opposite side of the cage, aided by his stick which he can shift after the opponent has shot the puck and its direction can no longer be changed.

How Passing Wins Hockey Games. The left wing has carried the puck around the defense and has approached the goal from the left side of the rink. As the goalie has him covered so that it is practically impossible to get the puck into the net, the left wing cleverly passes it to his right wing who is in front of the net and the latter snaps the puck in before the goalie can turn and cover that side of the cage. This is one of the best plays in hockey and should be practiced until the players are proficient in it.

The "poke check" or, as it is sometimes called, the "hook check." Very few players can do this well, but when one is found who can it is a very strong defensive and also offensive weapon. Its importance defensively can easily be seen, as it is a ready tool for getting the puck away from an opponent. Its offensive advantage is that the player, when he does gain the puck from the opponent, is in a fine position to "jump" away from the opposing player because the latter is going in the opposite direction. The important point in executing this check is to lay the stick so flat on the ice that the puck carrier cannot slip the puck under the stick.

Offensive line play. In this illustration the center has just passed the puck to his left wing. Note that all three players have their sticks with the blades on the ice. This is an important point, as inexperienced players often keep their sticks off the ice and thus miss many passes.

Illegal leg and stick check. The offensive player (player with his back turned) has attempted to skate with the puck around the opposing defensive man. The latter illegally has skated into the puck carrier, and with his right knee is pushing or lifting him. In addition to this the defensive player has also cross-checked with his stick, thus preventing the puck carrier from getting around him. Either or both of these checks are penalized by a two-minute stay in the penalty box.

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Photos by



ABOVE—GOALIE'S STANCE. THIS IS A PERFECT EXAMPLE OF THE CORRECT STANCE FOR A GOAL GUARD. RIGHT—HOW PASSING WINS HOCKEY GAMES. THE LEFT WING, APPROACHING THE GOAL FROM THE LEFT, PASSES TO HIS RIGHT WING AS THE GOALIE GOES TO BLOCK THE LEFT WING'S POSSIBLE SHOT. BELOW—POKE CHECK, OR, HOOK CHECK. AN IMPORTANT, BUT DIFFICULT, DEFENSIVE MANEUVER. (SEE COMPLETE CAPTIONS ON OPPOSITE PAGE).



ABOVE—OFFENSIVE LINE PLAY. NOTE THAT ALL THREE PLAYERS HAVE THEIR STICKS WITH THE BLADES ON THE ICE. BELOW—ILLEGAL LEG AND STICK CHECK. THE OFFENSIVE PLAYER (WITH HIS BACK TURNED) HAS ATTEMPTED TO SKATE WITH THE PUCK AROUND THE OPPOSING DEFENSIVE MAN. THE LATTER ILLEGALLY HAS SKATED INTO THE PUCK CARRIER AND IS PUSHING HIM WITH HIS RIGHT LEG. DEFENSIVE PLAYER IS ALSO CROSS CHECKING. (SEE COMPLETE CAPTIONS ON OPPOSITE PAGE.) PHOTOGRAPHS POSED BY POM-FRET SCHOOL PLAYERS.



Photos by David G. Lewis

STRAIGHT-AWAY BASKETBALL

By W. B. Owen

Mr. Owen is principal and coach of the Horse Cave, Ky., High School. During the past three seasons Horse Cave teams have lost but two games out of sixty-five played. Those two losses were in the semi-final and final rounds of the state championship tournament.

IKE football with all its Warner-Rockne intricacies, the fundamentally simple game of basketball has assumed a befuddling complex in the minds of some critical observers and to over-zealous young coaches, who insist on playing the game strictly according to the prescribed formula of a favorite system. As a rule the latter become thoroughly disillusioned by experience, whereas the former are likely to continue believing that "systematic coördination" should be promptly substituted for what they are prone to call "senseless confusion."

When a team is fairly successful, numerous questions arise and must be answered before many of the admiring or jealous fandom are willing to admit the team in question is really worthy of their notice. Does the team use a long or short pass attack, a fast or delayed break? Is the offense based on pass, dribble, and cut tactics, or on screen and block formations for scoring opportunities? Does the defense depend on man-to-man assignments or

on individual responsibility for certain areas of the playing court? Is the coach teaching Carlson, Allen, Lambert, Holman, Meanwell, or the theories of other well-known basketball mentors?

On the other hand, there are legion of those who scoff at the idea of pre-arranging conditions in such a furious game as basketball. They contend that conditions arise spontaneously, which will result in scoring opportunities or in defensive advantages not included in the formulas of a system. Exponents of basketball "by ear" stress fundamentals and depend on the initiative of the individual players to produce a winning combination.

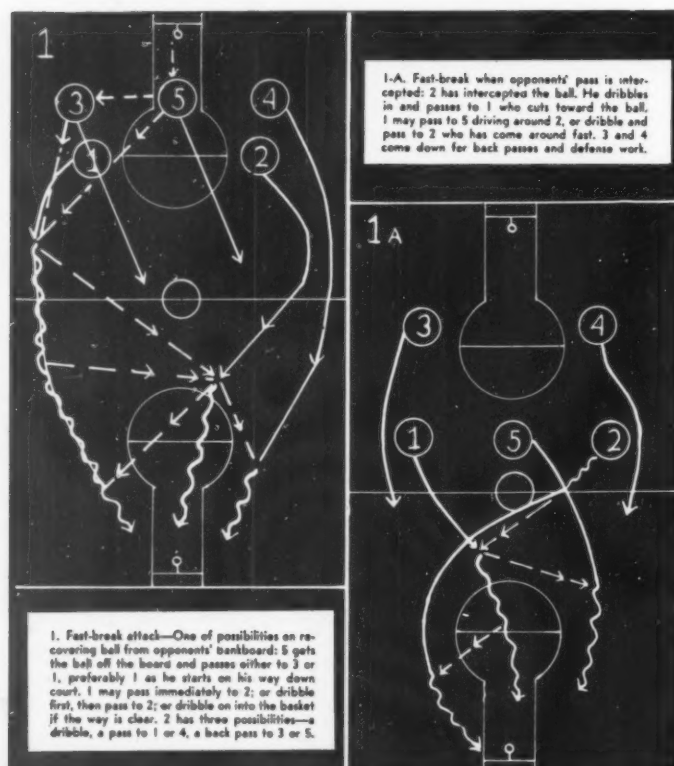
Horse Cave High School teams use a type of play which seeks to compromise the extremes of systematic play and the more unorthodox style just described. Due to the straightforward methods employed in advancing the ball we refer to it as "Straight-Away Basketball." If it deserves the distinction of being called a system, the stressing of the following are responsible: both fast and delayed offensive breaks, position defense, expert passing and rapid rotation of the ball, sharp angles in the paths of players, a minimum of back passes, pivots, and dribbles, and a constant driving toward the basket on the part of players

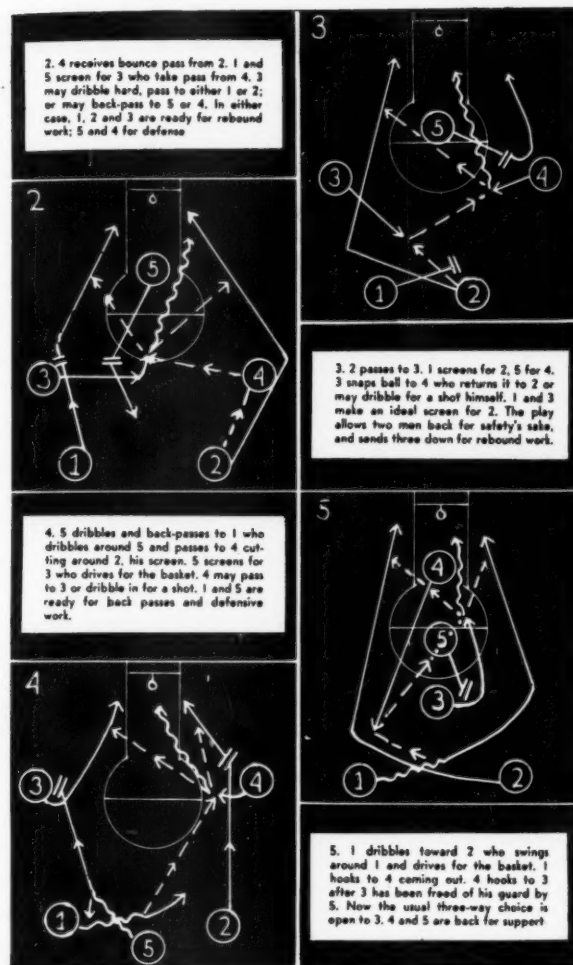
and the direction of the ball. From the first day a junior high school boy dons a uniform until the last game of his senior year he is frequently reminded that a straight line is the shortest distance from the enemy backboard to the home score-book. The use of both fast and delayed offensive drives presents a psychological problem, but it can be done without disturbing the mental attitude of the players. We simply make

the fast move every time the ball is regained and resort to slow tactics only when defensive hazards make further advance inconsistent with safe handling.

When the ball is taken from the opponents' backboard by one of our players, he is flanked on either side by a teammate ready to take a pass while the other two are heading toward the sidelines and down the floor. Quick forward passes follow with at least three players driving toward the basket, cutting sharply seeking to free themselves for a fast dribble and lay-in shot. In case a pass is made directly to the advancing forward, it is thrown inside the receiver rather than to the side next the sidelines. A view of the court by the player receiving the ball overbalances the increased danger of interception. If the forward is well out toward the sideline, as he should be, there is no grave danger of an opponent intercepting the pass. After the lead pass is complete, the receiver usually has three options before him as is shown in Diagram 1. He may pass immediately to No. 2, who has swung out and cut sharply toward the foul line, he may dribble and pass to 2, or continue the dribble into pay territory. If the pass is made to No. 2, he will be able to make a return pass to 1, pass to 4, who has trailed the play timing his break for the basket, or he may make the try for the ring. Either Nos. 1 or 2 can back-pass to 3 or 5 if the defensive players are alert enough to stop the fast break attempt completely, in which case the offense will suddenly switch to the more deliberate type of play. Diagram 1A illustrates fast break opportunities when the ball is intercepted by the front defensive line. No. 2, who has taken the ball, dribbles diagonally across the floor, passes to 1 cutting from the other side of the floor, and continues behind 1 to a scoring position. No. 1 has the usual options, pass to 5 or 2, or dribble and shoot. In every case the emphasis is on forward progress of the ball; the players soon become possessed with that objective and will very infrequently pass the ball backward unless forced by the opposition.

When the defensive players are able to stop the driving fast break, our players drop back and resort to a style of play very similar to that seen in any average game, the players shifting and jockeying in the attempt





to break loose for a shot at either close or longer range. Even yet, however, feints, dribbles, pivots, and back passes are minimized insofar as they are dispensable in advancing the ball and maneuvering players into favorable positions. Deceptive and rapid rotation of the ball is the preferred weapon with split-vision passing playing a major part in the wizardry. Chest passes, interspersed with low bounces and an occasional hook constitute the basis of attack. Straight-Away basketball is essentially a crisp-shot game varied now and then by long tosses for the purpose of pulling out and spreading the defense. When long shots are attempted, the offensive set-up is about the same as was seen at the other end of the floor, three boys in a row ready for aggressive rebound duty if the shot is missed.

Diagram 2 shows a play (in fact two, since the ball can be started on the opposite side of the floor) that depends on a 2-2-1 arrangement of the offensive players. No. 2 bounces to 4, cuts around him and heads for the basket. Nos. 1 and 5 execute a double screen for 3, who cuts toward the center of the floor, cuts abruptly in, takes the pass from 4, and is in position to pass to 2 or 1, or head for the basket. The play in Diagram 3 is run from practically the same arrange-

ment, excepting that 1 and 2 are closer to facilitate screening for each other. No. 2 snaps the ball to 3, cuts around 1 and 3, and drives toward the basket. No. 5 screens for 4, who takes the pass from 3, and cuts sharply back into scoring position. No. 4 may dribble in or whip the ball to 2. Split-second timing is essential, and it can be worked out satisfactorily. In Diagram 4 one back-pass is made. No. 5 dribbles toward 1, back-passes and screens for 3. No. 1 dribbles toward the center, passes to 4 cutting around a screen made by 2, and drops back for defense or back-passes. No. 4 has the usual situation before him. The set-up shown in Diagram 5 is run from the more unorthodox Y formation. No. 1 dribbles toward the center, hooks to 4, and drives out and back toward the basket. After 5 screens off 3's guard, 4

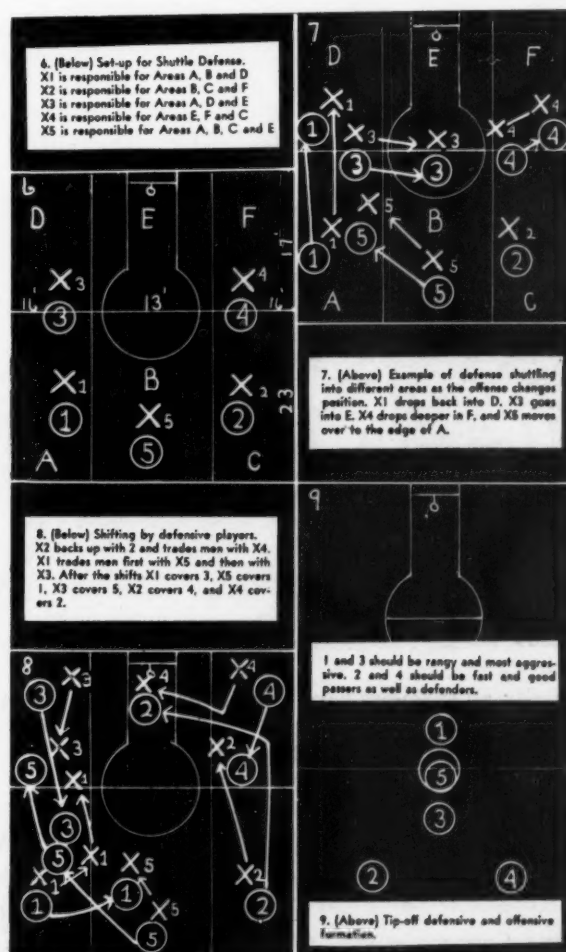
hooks the ball to 3, who is now ready to dribble or pass to 1 or 2. In each of these set-ups the idea is to liberate a player either by fast hard cutting or by screening so that he may drive in for a crisp shot. Emphasis is placed on forward thrusts aided by careful but rapid handling of the ball. Pivoting and contortions of the body are discouraged since we believe that fast accurate passing is more disconcerting to the defense than any amount of shoulder or hip swinging. It is decidedly more difficult to watch your opponent in one place and the ball in several than to watch both in the same place. We seldom lose a chance to score due to St. Vitus gyrations on the part of one of our players while standing in front of the enemy defense. We realize, however, that pivots, stops and turns, feints, and the like are useful in eluding

the defensive players and in checking their offensive movements, but our teams use them only when cut, pass, and drive tactics fail.

Straight-Away basketball is entirely void of signals, position and direction of the ball being the only indication of what is to come next. Every formation is designed so that a number of combinations may reasonably result without impairing the coordination of the play. If unheralded and spontaneous conditions arise that are favorable, the players are taught to forget rule and play by ear. At the tip-off a rangy aggressive pair of boys (if we have them) are placed directly behind the opposing centers while the remaining two are stationed about ten feet back of our center and about the same distance apart. Diagram 9 shows this to be a sound defensive formation in case the opposition controls the ball and assures a good start for a straight-away attack if the ball is taken from the tip at center. This formation as is every other is designed to produce an actual as well as mental hazard for the defense, the constant dread of a quick direct thrust at the basket.

In order to instill the forward-going, driving elements of the style of play in the minds of the players it is necessary to stress them in practice drills and for-

[Concluded on page 27]



MECHANICS' OF THE TRACK RACING START

By Thomas Kirk Cureton

Mr. Cureton is Professor of Applied Physics and Body Mechanics at Springfield College, Springfield, Mass., where he has done notable work in athletic research. His studies in the field of swimming and aquatics culminated in the writing of a three-volume text, the first volume of which appeared last spring—"How to Teach Swimming and Diving" (Association Press). In 1929 Mr. Cureton turned to track and field, and on his findings in this study he based the series of five articles he has prepared for *Scholastic Coach*, this being the first. The next four articles will take up running, high jumping, broad jumping and shot putting.

THE first public appearance of the "crouch" start in America was at the Rockaway Hunt Club games, Cedarhurst, L. I., May 12, 1888. Illustration I shows the starters in this event. The runners numbered from left to right are: S. Derickson, Columbia; S. J. King, Princeton; F. B. Lund, Harvard; C. H. Sherrill, Yale. Sherrill was the first runner to use the crouch. C. D. Turner was the starter. Nothing like it had been seen by those present. Sherrill won the race and gave popularity to the new "crouch" start. Credit is given to Michael Murphy for suggesting this style to Sherrill.

The "crouch" proved itself in a practical way to be faster than the older "lunge" style, executed from a standing position, half bent over and using the arms to aid in the throw forward from the starting line. Uni-

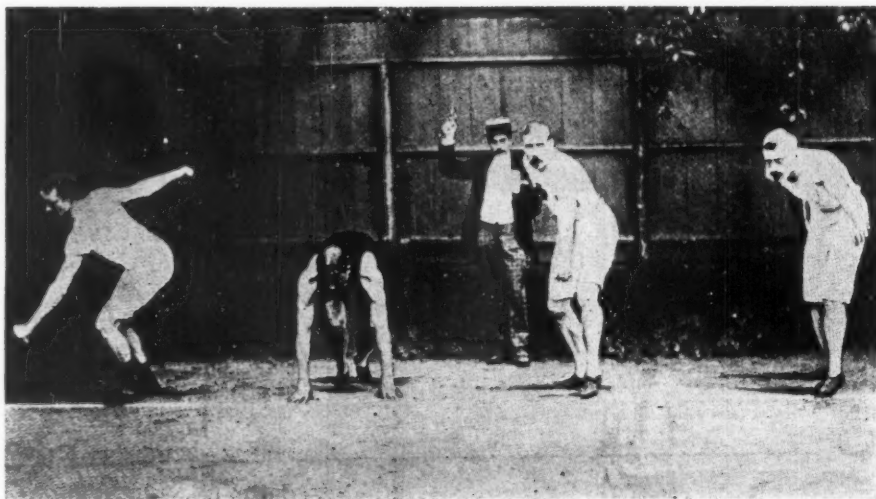


ILLUS. I—From *How To Sprint* by Hahn (American Sports Pub. Co.)

versally all sprinters have come to use the "crouch."

A number of the older styles are interesting and some of them may still be seen to be used in the starts of the distance races. Illustration II shows several of these styles.

¹Mechanics is best defined as meaning an analysis of the act in terms of the dimensional, force and time relationships.



ILLUS. II—From *How To Sprint* by Hahn (American Sports Pub. Co.)

The past few years have witnessed numerous arguments relative to the advantages and disadvantages of "starting blocks." These were invented and patented by George T. Bresnahan, track coach at the State University of Iowa, April 29, 1927. These blocks permit protection of the track from holes, save time and create confidence for the push because of their firmness. A recent study² has shown that they permit a faster start with an average advantage equal to one foot.

Coaches and sprinters alike are still searching for a faster start. For instance, Lawson Robertson suggests the use of grip handles fastened by ropes to a post behind each starter. These would permit the runner a greater lean forward and place his body more exactly in the running position. Another style somewhat similar in mechanical principle is the placing of supports under the hands to hold the shoulders higher.

The race is timed from the firing of the gun. The start requires great skill. A fast reaction, forceful movements

perfectly regulated for greatest efficiency with respect to direction and timing summarize the mechanical requirements. Such skill is rightfully a part of the race.

Research answers questions of doubt. In recent years athletic research has come to the fore. It is destined to continue on a much larger scale. Professional colleges of physical education support laboratories for the investigation of many problems of this nature. Springfield College has been making a specialty of such work for years.

Studies on the Track Racing Start. Nakamura³ demonstrated in 1928 that the fastest start was secured when the starter held the runners in the "set" position for 1.5 seconds as compared with 1.0 and 2.0 seconds. G. A. Walker and T. C. Hayden⁴ continued this study in this country and by varying the interval of delay between "set" and the gun shot from 1 second to 2 seconds in increments of two-tenths of a second, verified the Japanese study by finding that a delay of 1.4 to 1.6 seconds permitted the fastest get-away.

Nakamura also points out that the reaction time of the man is very important. The reaction time of the start in which the whole body is moved requires .180 second to be compared with the simple left forefinger reaction speed of .133 second.

Continued experimentation at the

³H. Nakamura, *An Experimental Study of Reaction Time in Starting Races*, Jour. of Psychol., Japan, 1928, III, pp. 231-262. (Translated in English—see Research Quarterly Supplement, A.P.E.A., Vol. V, March 1934, No. 1.)

⁴G. A. Walker and T. C. Hayden, *The Optimum Time for Holding a Sprinter Between the "Set" and the Stimulus (Gun Shot)*, Research Quarterly, Amer. Physical Educ. Assn., May 1933, Vol. IV, No. 2, pp. 110-130.

²T. C. Hayden and G. A. Walker *A Comparison of the Starting Time of Runners Using Holes in the Track and Starting Blocks*, Research Quarterly, Amer. Physical Educ. Assn., May 1933, Vol. IV, No. 2, pp. 110-130.

University of Iowa has produced other studies. Bresnahan⁵ demonstrated that left-handed athletes should start with the right foot forward and right-handed ones with the left foot forward. Any variation of this order slowed the starting time. The sequence of moving the body parts after the gun was for the right-handed person:

	Specific Time	Cumulative Time
1. Left hand up from line	.115 sec.	.172
2. Right hand up from line	.085	.219
3. Right foot out of hole	.035	.286
4. Left foot out of hole	.160	.443

A. D. Dickinson⁶ studied the placement of the feet for the best start. The fastest style in all but four cases was the "Drew" style of start with the front foot placed 11 to 18 inches back of the line and the rear foot nearly opposite the heel of the front foot (about 9" behind the toe of the front foot). (See Illus. III.) Taller men set the front foot somewhat farther back from the line than shorter men. Poorest results were obtained when the feet were widely separated and the front foot placed very close to the line.

J. W. Kistler⁷ studied the distribution of force exerted in starting. His results show that the drive came from both legs and in the usual style more force came from the forward foot. This result was reversed when the back foot was placed quite a long distance behind the front foot.

A. H. Felker⁸ demonstrated that trained sprinters inspire and hold their breath after the command "get set." Untrained men failed to hold their breath. It is thought that holding the breath allows a better focus of attention and permits a greater effort through the better fixation of the

abdominal muscles making a firmer pelvic base for the leg muscles to act on.

Springfield studies. In 1929 investigation of the track racing start was begun at Springfield College by the writer. A method was perfected for measuring the time required to sprint a short distance, the time being measured to hundredths of a second. This method is described in two studies, first, in a project study by John H. Burr⁹ in 1931, who investigated the start under my direction, and second,



ILLUS. III—HOWARD DREW
100 yds. 9.6 seconds

From *How To Sprint* by Hahn (American Sports Pub. Co.)

a later study on the accuracy of stop watch timing in sprints by Cureton and Coe¹⁰. Additional description is given by Welser¹¹. The over-all start was tested, i.e. from the "gun" until the runner touched a tape 20 feet away. Additional experimentation was completed by the writer during the summer of 1931, using this apparatus and also slow motion photography.

The results of these Springfield

⁹J. H. Burr, *Methods of Studying the Track Racing Start*, Applied Physics Project, Springfield College library, 1931.

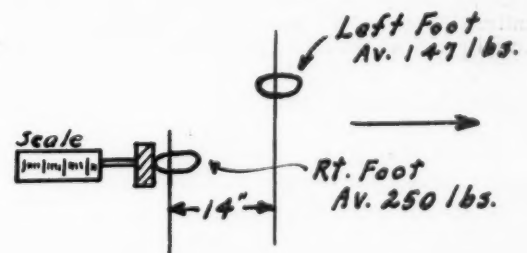
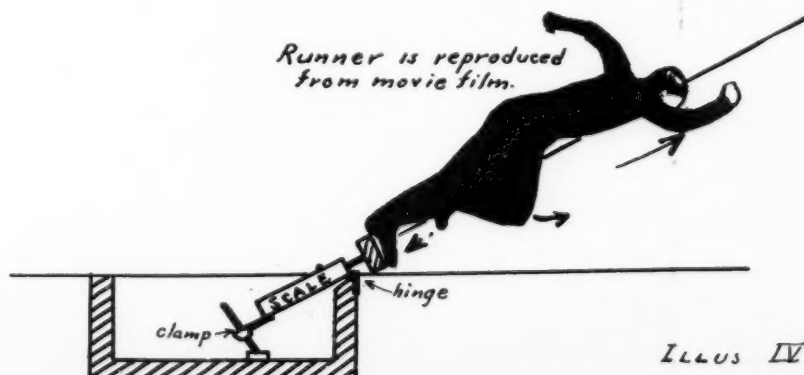
¹⁰T. K. Cureton and D. E. Coe, *An Analysis of the Errors in Stop Watch Timing*, Research Quarterly, A.P.E.A., Vol. IV, No. 2, May 1933.

¹¹Lyle Welser, *A Practical Electro-Mechanical Race Timer*, Research Quarterly, Amer. Physical Educ. Assn., Dec. 1933, Vol. IV, No. 4, pp. 97-107.

studies showed that four subjects with varsity experience required an average of .225 second to completely clear the blocks after the gun fired and 1.208 seconds to actually run the first 20 feet. The complete time was 1.433 seconds. A slightly faster result was obtained when the start was made from the crouch with the back parallel to the ground as compared with the positions assumed with the buttocks too high or too low. The low "bunched" position was better than the very high style. It was demonstrated that a relatively short first step of 2 ft. 10 in. in front of the line produced faster results than steps averaging one to two feet or three feet longer. The average difference between the short and longer steps was .09 second or an average distance of 1.197 feet. Concentration of the mind on the sound of the gun produced slightly better results than concentration on a point ahead on the track or on the muscular push when in the "set" position. A much more extensive study by the writer on Eddie Milde, the New England college record holder, during the summer of 1931, produced the same results on all of these points. With his normal start proving faster than any variation and concentrating on sound, Milde required .217 second to clear the blocks and 1.21 seconds to run the first 20 feet, with a total time from the gun of 1.427 seconds. Varying his position to higher or lower buttocks slowed his time, even after considerable practice. Milde's fastest time of 1.41 seconds for this distance was with a short first step 2 ft. 9 in. in front of the line. A longer or shorter step slowed his time. Each step out of the holes was successively longer by approximately 3.5 inches. It was obvious that the men who had a fast reaction time were the better sprinters for 20 feet. The five subjects reacted as indicated in the data below:

	Reaction Time to Clear Block (Sec.)	Time Running to 20 feet (Sec.)	Total Time to 20 feet (Sec.)
Subjects:			
C (distance runner)	.45	1.28	1.74
W (javelin thrower)	.26	1.26	1.52
M (N. E. Champ.)	.217	1.21	1.427
B (Excellent vars. sprinter)	.10	1.21	1.31
S (probably anticipated)	.09	1.08	1.17

[Concluded on page 31]



ILLUS. IV

Over the Field

Scholastic Coach, with this issue, announces a new department—Over the Field—to appear each month containing such items as:

- Summaries and reviews of articles and studies that may be of assistance to the coach and director of scholastic athletics.
- Bibliography of sports—in season.
- Bibliography of text-books in current use in the field of physical education and health; physiology, anatomy texts, etc.
- Physical proficiency tests used throughout the country.

"Over the Field" will be conducted by Hyman Krakower, Ph.D. (New York University, School of Education), member of the staff of the Department of Hygiene, College of the City of New York.

In the 1934-35 yearbook of the New York State Public High School Athletic Association, it was interesting to note the *Code of Ethics* that had been set up for the coach and here it is:

It is the duty of the coach—

1. To set up the proper ideals of sportmanship and ethical conduct of the games from the point of view of the coaches, players, officials and spectators.

2. To eliminate all procedures which tend to distract from the best interests of the games, such as not starting the games on time, players haggling with officials, etc.

3. To stress the values derived from playing the game fairly.

4. To secure courteous treatment of the visiting team and the officials by the spectators.

5. To establish a happy relationship between the visiting coach and himself and the visiting players and his own players.

6. To secure only competent officials whose integrity is unquestioned.

7. To see that his players are thoroughly taught the rules governing the sport in which they are taking part.

8. To abide by the theory that "learning by doing" is an accepted educational maxim, and that it is, therefore, good educational practice for the coach to instruct the members of his team to use their own brains and strategy and not to depend upon him at crucial moments.

9. To bear in mind that the purpose of athletic contests is to promote the physical, mental, moral, social and emotional well-being of the individual players.

10. To bear in mind that participation in athletics is the right and privilege of the entire student body, and, therefore, intramural activities should be provided.

Athletic Badge Tests

The National Recreation Association has adopted certain standards as tests of athletic ability for boys and girls. The events have been chosen as representing those which are best suited for use throughout the country under all sorts of conditions. Certain options are allowed in order to make the tests adaptable to varied local conditions and to allow choice of those

activities most interesting to the boys or girls of any locality.

Rules:

It is necessary to qualify at one time in all four events in any test in order to win a badge. If a candidate fails in the tests one day, he should be permitted to practice until he can pass the test.

No boy or girl may earn more than one badge in each of the three tests, nor having received a badge, may he or she compete for a badge of a higher class until six months have elapsed.

Even though boys and girls have not received a first-test badge, they may qualify for a badge of a higher order.

Any responsible adult may give the tests.

Test for Boys:

The events in the test for boys are based on the "four fundamental activities to be included in any proficiency test;" they are climbing, jumping, running and throwing.

First Test

- Either Pull-up (chinning) _____ 4 times
or Rope climb (using both hands and legs) _____ 12 feet
- Standing broad jump _____ 5 feet 9 inches
- Either 60-yard dash _____ 9 seconds
or 50-yard dash _____ 8 seconds
- Either Baseball throw (accuracy) _____ 3 strikes out of 6 throws at 40 ft.
or Baseball throw (distance) _____ 130 feet

Second Test

- Either Pull-up (chinning) _____ 6 times
or Rope climb (using both hands and legs) _____ 16 feet
- Either Standing broad jump _____ 6 feet 6 inches
or Running broad jump _____ 12 feet
- Either 60-yard dash _____ 8 seconds
or 100-yard dash _____ 13-2/5 seconds
- Either Baseball throw (accuracy) _____ 3 strikes out of 5 throws at 45 ft.
or Baseball throw (distance) _____ 195 feet

Third Test

- Either Pull-up (chinning) _____ 9 times
or Rope climb (using hands only) _____ 16 feet
- Either Running high jump _____ 4 feet 4 inches
or Running broad jump _____ 14 feet
- Either 220-yard run _____ 28 seconds
or 100-yard dash _____ 12-3/5 seconds
- Either Baseball throw (accuracy) _____ 3 strikes out of 5 throws at 50 feet
or Baseball throw (distance) _____ 220 feet
or 8-pound shot put _____ 28 feet

It has been found that boys of twelve years of age should be able to qualify for the badge under the first test, elementary school boys of thirteen years and over for the second test, and high school boys for the third test. It does not seem, however, that the different standards should be limited to these age groups. Accordingly, no age or even weight limit is fixed. Any boy may enter any test at any time. To pass a

test a boy must qualify in four events, one from each of the four classes, climbing, jumping, running and throwing. All tests must be made without the aid of spiked or cleated shoes of any sort; tennis or gymnasium shoes are allowed.

Test for Girls

The National Recreation Association has adopted the following as standards which every normal girl ought to be able to attain. One event should be selected from each group.

First Test

- Balancing (1 deep knee bend) _____ 24 feet, 2 trials
- Either Potato race _____ 22 seconds
or All-up Indian club race _____ 30 seconds
or 50-yard dash _____ 8 seconds
- Either Basketball throw (distance) _____ 35 feet
or 12-inch indoor baseball throw (accuracy) _____ 2 strikes out of 5 throws at 25 feet
- Either Volleyball serve _____ 2 in 5
or Tennis serve _____ 3 in 6
or Basketball goal throw (10 ft. line) _____ 2 in 5
or 12-inch indoor baseball throw and catch _____ 3 errors allowed

Second Test

- Balancing (book on head; 1 deep knee bend) _____ 24 ft., 2 trials
- Either Potato race _____ 20 seconds
or All-up Indian club race _____ 28 seconds
or Run and catch _____ 19 seconds
or 50-yard dash _____ 7-3/5 seconds
- Either Basketball throw (distance) _____ 45 feet
or 12-inch indoor baseball throw (accuracy) _____ 3 strikes out of 6 throws at 30 feet
- Either Volleyball serve _____ 3 in 6
or Basketball goal throw (12-foot line) _____ 3 in 6
or Tennis serve _____ 3 in 5
or 12-inch indoor baseball throw and catch _____ 2 errors allowed

Third Test

- Balancing (book on head; 3 deep knee bends) _____ 24 feet; 2 trials
- Either Potato race _____ 18 seconds
or Run and catch _____ 17 seconds
or 50-yard dash _____ 7-1/5 seconds
- Either Basketball throw (distance) _____ 55 feet
or 12-inch indoor baseball throw (accuracy) _____ 3 strikes out of 5 throws at 36 feet
- Either Volleyball serve _____ 3 in 5
or Tennis serve _____ 3 in 4
or Basketball goal throw (12-foot line) _____ 3 in 6
or 12-inch indoor baseball throw and catch _____ 1 error allowed

The tests are for general use under all circumstances. They include: First, balancing for poise and muscular coordination; second, running for short distances and introducing where possible the element of skill as well as speed; third, throwing events; fourth, events which require ability in the fundamentals of games.

There are no height, weight, or age limits in the Athletic Badge Tests for Girls, but an attempt has been made to provide tests of progressive difficulty. To win a badge in any test a girl must qualify in one event in each of the four groups in that test.

Basketball books

Anderson, Lou E. *Basketball for Women*. New York: The Macmillan Company, 1929, Pp. 124, illustrated—photographs and diagrams. \$1.75.

The book is intended for the teacher and the prospective teacher. The elements of basketball are not described in a detailed manner, but in a short narrative form. Basketball drills and self-testing elements are given for class use. The text does not seem to be adequate as to details for the coach.

Allen, Forrest C. *My Basketball Bible*. Kansas City, Mo.: Smith-Grievess Co., 1934, Pp. 448; illustrated—photographs and diagrams. \$4.

"Phog" Allen's book is out in its twelfth edition. The book first appeared ten years ago, and has been rolling along ever since. Dr. Allen goes into the details of individual fundamentals and tactics. The introductory chapter is on preparations for the season. The section on athletic injuries and emergencies has been exceptionally well received.

Carlson, H. C. *You and Basketball*. Brad-dock, Pennsylvania: Brown Pub. Co., 1928; Pp. 175, illustrated—diagrams. \$3.75.

The Pitt coach's book is one third inspiration, one third basketball, and one third physical care and officiating. For coaches interested in technical material, the chapter on team offenses with continuity, man-ahead-of-the ball system, is the saving feature of the book.

Dean, Everett S. *Indiana Basketball*. Bloomington, Indiana: Everett S. Dean, 1932. Pp. 104, illustrated—diagrams and photographs. \$1.50.

Outlined notes for use of coaches on the way basketball is played in the game's "capitol state." It is in the nature of a workbook, with questions and answers at the end of each chapter.

Carlson, H. C. *Carlson's Offensive System*. Tiffin, Ohio: Sayger Sports Syndicate, 1934. Pp. 10, 11 in. x 16 in. \$1.

"Suz" Sayger has taken the features of the Pitt attack and transferred them to continuous-action diagrams. It is loose-leaf, and fits into the binding for *Basketball's Assistant Coach*. (See Hinkle below.)

Holman, Nat. *Winning Basketball*. New York: Scribner's Sons, 1933. Pp. 215, illustrated—motion pictures, photographs and diagrams. \$2.

Written by a famous coach and player (New York Original Celtics). It is addressed to the coach and player of some experience, and gives more space to team tactics than to fundamentals. Holman expresses his preferences (such as the man-for-man defense) but does not ignore other methods. One chapter is devoted to solving basketball problems in the form of questions and answers.

Lambert, Ward L. *Practical Basketball*. Chicago: Athletic Journal Publishing Co., 1932. Pp. 243, illustrated—photographs and diagrams. \$4.

A complete book for the coach; sharp, clear photographs, large diagrams. The concluding chapters are on "The Coach a Student of Psychology" and on tournament play. Lambert devotes much of his space to the fast-break, the system he teaches at Purdue.

Hinkle, Paul; and Sayger, H. E. *Basketball's Assistant Coach*. Tiffin, Ohio: Sayger Sports Syndicate, 1933. Pp. 55, looseleaf. Size of pages, 17" x 11½". Large drawings and explanatory text. \$5.

A book of drawings showing all the basketball fundamentals on detachable pages, suitable for posting on the bulletin board. This year's edition includes illustrations of Hinkle's offense.

Meanwell, Walter E. *The Science of Basketball*. Madison, Wisconsin: H. D. Grath, publisher, 1924. Pp. 382, illustrated—diagrams and photographs. \$3.50.

The author is the originator of the short-pass, pivot-screen type of attack, and one of the chapters goes into the details of this attack, with a goodly supply of diagrams. Half of the book is given over to fundamentals, with short chapters on the history of the game, training and conditioning, and the treatment of injuries; the other half is on team tactics and systems of play.

Olsen, Harold. *Olsen's Offensive Systems*. Tiffin, Ohio: Sayger Sports Syndicate, 1934. Pp. 10, 11" x 16". \$1.

"Suz" Sayger's drawings showing (a) set offense with three men out and two in; (b) two men out and three in; out-of-bounds plays; rotating offense. Like *Carlson's Offensive System* (see Carlson above) it fits into the binding for *Basketball's Assistant Coach*.

Ruby, J. Craig. *Coaching Basketball*.

Champaign, Ill.: The Basketball Book Co. 1931. Pp. 308. Illustrated—photographs and diagrams. \$4.

A textbook by the famous Illinois coach, giving general and detailed information on all styles of play. It is for the coach of some experience. It is a thorough work.

Ruby, J. Craig. *Team Play in Basketball*. Champaign, Ill.: 1931. Pp. 158. Illustrated—diagrams. \$2.

This book concerns the organization and direction of a basketball team and is for the experienced coach. It is a separate binding of Part III of Mr. Ruby's *Coaching Basketball* (see above).

Taylor, Chuck; and Sayger, S. E. *Basketball Finesse*. Tiffin, Ohio: Sayger Sports Syndicate, 1933. Pp. 62. \$1.

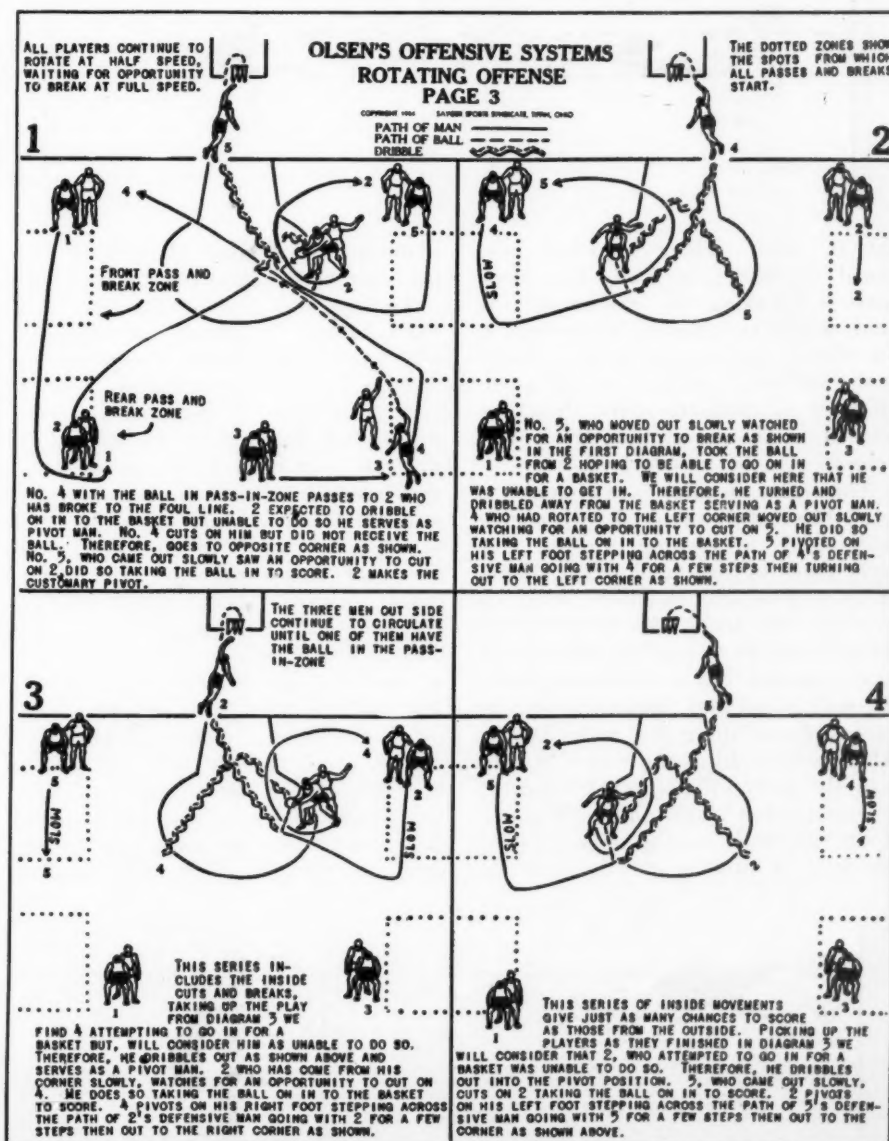
Reviewed in this issue. See *New Books on the Sports Shelf*.

Veenker, George F. *Basketball for Coaches and Players*. New York: A. S. Barnes and Company, 1929, illustrated—photographs and diagrams. \$3.

A book based on lectures given by the author in a coaching school. The material is logically developed, starting with preparation for a season and working forward step by step. The various plays described are illustrated by full page diagrams.

[Concluded on page 31]

PAGE REPRODUCTION, GREATLY REDUCED, FROM ONE OF THE SAYGER LOOSELEAF BOOKS. ACTUAL SIZE IS 16" x 11"



THE FREE STYLE RACING TURN

By Albert W. Gray

Details of the approach, manipulation of the body in turning, and the leg push-off

This is the second of a series of articles on competitive swimming by the coach of the New Haven, Conn., High School swimmers. Mr. Gray's third article will be on the back crawl stroke racing turn, and will appear in the February Scholastic Coach. The accompanying drawings by the author are from his motion picture studies of swimming technique.

HOW many times have your swimmers lost a race which they might have won had they made their turns more efficiently? At the crack of the pistol they got off beautifully and were the first to strike the water. Going up to the turn they were leading by two or three feet. Then came the turn, and as they floundered out of it and cleared away for the renewal of the stroke you saw that their lead of three feet had become dissolved. The other swimmers were now

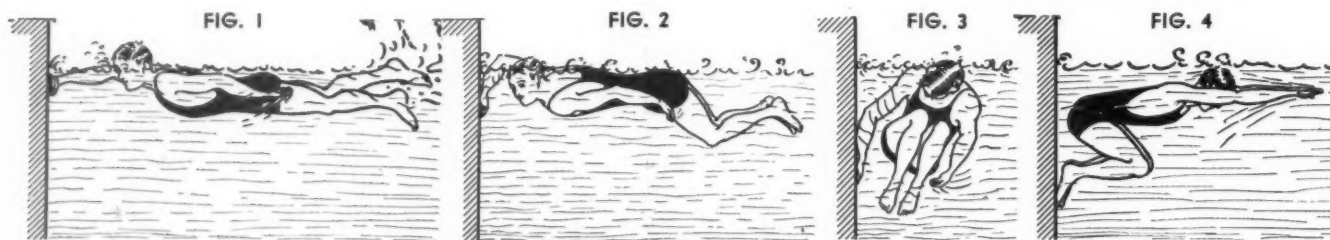
turning. A common fault among inexperienced swimmers is to press so hard against the wall with the contact hand, and so maneuver the body, that the posterior is out quite a distance from the wall when the feet go to make the push-off. To get the best results from the foot push-off it is important to keep the body well coiled and close to the wall, with knees drawn up toward the chin (Fig. 3) as the body turns.

The Johnny Weissmuller method of making the free style turn is widely used, and should be given a fair trial by every swimmer. If the right hand is making the touch, the head should be turned over on the left ear and plunged into the water as the hands are brought around and the feet

tage that may result from too much use of the open water turn is that the swimmer may become so adept at turning without touching the wall that he will forget to use it when he is competing.

There are two main types of racing turn. The under-water turn and the above-surface turn. The under-water turn is made without taking a breath, the last breath taken before touching the wall being made to last until the natural rhythm of the stroke allows for the next regular breath. The above-surface turn allows for a breath because the head is lifted before the pushoff.

The under-water turn is the type preferred by most swimmers. Less resistance is offered the pushoff when



out in front. Their approach was timed so that they made the touch without breaking the rhythm of the beat or the knuckles of their fingers. They had spun around with feathery grace and their touch, turn and push-off were so efficiently done that they seemed to be one motion. They had "class."

The rules require a swimmer to touch the end of the pool with one or both hands in turning. In the free style turn the one-hand touch should be used. The arm and hand which is to make the touch should be thrust straight out as in making the regular recovery, and then as the hand grazes the wall, hand and forearm should be curved down along the wall, as the other hand paddles the water to help turn the body. The contact hand, at the completion of its quick dip down along the wall, should press against the wall to further aid the body in

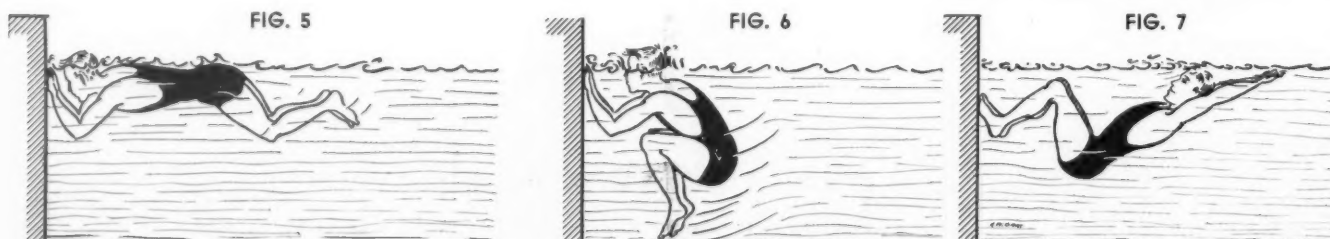
planted down against the end of the pool, the body coiled for the push-off.

Timing and coordination are the chief factors in efficient turning, by which the turn becomes a continuous, flowing, streaming movement.

A turn may be executed in open water just as rapidly as against a wall. If a person is swimming free style and wishes to turn about in open water it is merely necessary for him to bring the knees to the chest, pull one arm backward while the other pulls forward, straighten the body and proceed in the opposite direction. This is comparatively simple and can be used as an exercise when practicing for the turn. The advantage of using this exercise when teaching the racing turn is that the pupil will learn how to make the water help him, learn the proper balance, and not become dependent upon grasping the gutter or end of the pool. The one disadvan-

the whole body is submerged. And, breathing being eliminated from the act of turning, there is one less function to perform. Whether the time gained compensates for the lessened air supply should be determined by the individual swimmer and his coach. Every swimmer should strive for such breath control and rhythm in approaching the touch, so that the turn can be the under-water type. Failing to achieve this control the swimmer will have to use the above-surface turn.

The above-surface turn may have its advantage in giving the swimmer an opportunity to take a breath. To limit the supply of air may in some cases materially retard the progress. Disadvantages are: the extra function of breathing must be coordinated with the other movements of the turn, the extra movement involved in lifting the head and body to provide for the in-



halation, a decided tendency to push off with the body held high, causing a large resisting wave to form in front of the chest.

Figures 1, 2, 3 and 4 show steps in the under-water turn. Another type of turn being used by some free style swimmers is one involving a push-off on the back, as in the back stroke turn. Some swimmers have been able to make better time with this turn than with other types. Figures 1, 5, 6 and 7 illustrate continuous steps for a turn of this type. As the swimmer contacts the wall with one hand (Fig. 1) the other arm is brought forward to touch the wall (Fig. 5). Next the head is thrown back and the feet are brought forward (Fig. 6). Pushoff on the back (Fig. 7) and glide for a convenient distance. The stroke begins while the swimmer is still on his back. The first stroke and the roll-over are completed practically simultaneously. As the swimmer reaches the position on his stomach he continues using the regular crawl stroke.

To return to the orthodox, under-water turn: Fig. 1 shows the swimmer completing one cycle of the stroke as the hand first touches the wall. If a swimmer finds himself too close to the wall to take another stroke but still not close enough to make contact, he should keep up the momentum by continuing his vigorous kick. As soon as the contact is made he slides the hand down the wall, as the other hand pulls forward, the knees simultaneously being brought to the chest. Fig. 2 shows the start of this and Fig. 3 shows the continuation, the body having been brought part way around. When the body has been completely turned about the feet are placed on the wall, the hands brought forward ready for the push-off (Fig. 4). The push-off should be vigorous.

It is advantageous for a swimmer to become ambidextrous in making his turns. A loss of time may result if he is only able to turn one way and his stroke doesn't happen to come out so that the desired hand touches the wall. If the right hand is to touch the wall the body will turn to the left and if the left hand is to touch the body will turn toward the right.

The distance of the glide after the turn depends upon the length of the race and the swimmer's ability. In a longer race it is possible to allow for a longer glide, actually giving the arms and legs a short rest. When sprinting the glide must necessarily be of shorter duration, the pace being so rapid that no time is allowed for any let-up.

Paying no attention to the turn until it has been suddenly reached is a common fault among young competitors. Time may be gained by carefully

"BANANAS

help build up

BODY RESISTANCE"

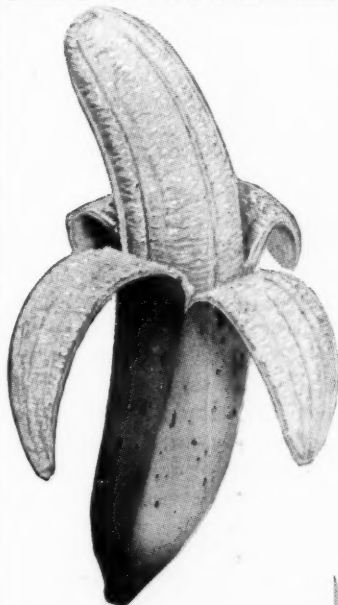
says Nat Holman,
famous as player and coach

"Basketball is a strenuous game and draws heavily on a player's physique. It is important to keep up body resistance for the many demands made upon it.

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Nat Holman

Basketball Coach, College of the City of N. Y.
(Author of "WINNING BASKETBALL")



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judging the moment when the turn must be made. Some swimmers prefer to watch the footage markings on the side of the pool, while others prefer to keep the end within the line of vision during the part of the stroke which permits the head to be held forward. Still others follow the lane marker on the bottom, looking for the cross line which is generally about five feet from the end of the tank. Any of these, or other methods, will be a distinct help to the competitor as long as he makes a conscious effort to gauge the time when he must touch and make his turn.

A coach can help his swimmers develop their turning and get them more interested in practicing it, by measuring the time it takes each swimmer to make the turn, and posting the results. The moving picture camera or the stop watch may be used in making a fairly accurate measure. Portable photo-flood lights and holders are now so reasonably priced that the question of lighting for indoor photography is no longer a serious one for the camera-minded coach who has a little extra money to invest in equipment. Many very fine film studies of swimming skills have been made by coaches in recent years.

In taking moving pictures of the turn, pictures taken from directly above the subject will show when the hand makes contact and when the feet leave. Counting the number of frames photographed during the interval of the contact in the turn and comparing them with previous performances of the same swimmer will help the coach to gauge the efficiency. The actual time taken to make the turn may be computed by dividing the number of frames photographed by the rate of speed the pictures are taken.

The method used to obtain the time required to turn about and gain momentum in the other direction has much to do with the study of the turn. To attempt to take the time with a stop watch from the moment of contact until the feet have left the turning point is difficult because of the shortness of the elapsed time. The resultant error seems to be less when the time is taken in the following manner: Stretch a rope across the pool at some convenient distance—about 15 feet or more from the turning point. The rope should be close enough to the water to aid the observers and at the same time be high enough so as not to interfere with the swimmer. Start the watch at the moment of contact at the turn and stop it when the swimmer passes under the rope. The time thus obtained may be used to better advantage for comparative study.

83



FOOTBALL PLAYERS in 100 VOTE TOASTED MALT FLAVORED HOT CEREAL FIRST CHOICE

More Vote for Malt-O-Meal than for all other hot cereals combined

SEVENTEEN football coaches in charge of squads all over America took a hot breakfast census at training tables this fall. They served Malt-O-Meal and other leading hot breakfast foods. When the ballots were counted eighty-three players out of one hundred said they liked Malt-O-Meal better than any other hot cereal.

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Except that it lacks roughage and some vitamins, milk alone would support the body in almost perfect health! No wonder doctors, dentists, die-

ticians, athletic coaches, all emphasize its importance.

One quart a day, authorities urge, during the years of growth and development. And at least one pint a day for all adults.

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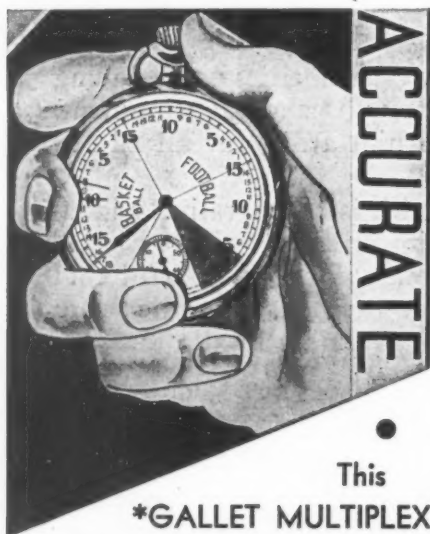
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THE NATIONAL HIGH SCHOOL FRONT

From the office of the National Federation
of State High School Athletic Associations

In the Southland

ON Tuesday, Dec. 4, there was held at Atlanta, Georgia, a regional conference of high school men interested in interscholastic athletics comparable in its scope and character to the one held in Chicago in October and reported on this page last month. The Atlanta conference was held in connection with the annual meeting of the Southern Association of Colleges and Secondary Schools. There were twenty men in attendance at the interscholastic conference, representing Alabama, Florida, Georgia, Louisiana, Mississippi and Tennessee.

The meeting was called to order by Mr. Wm. J. Baird of Birmingham, Alabama, who is vice-president of the National Federation of State High School Athletic Associations. The program, in general, was informal, the most nearly "formal" item on the agenda probably being a report by the Secretary of the National Federation on the general activities of the Federation. Some consideration was given to a report which had just been submitted on the same day to the Commission on Secondary Schools of the Southern Association. This report consisted of the results of a survey of athletic conditions in the high schools belonging to the southern association. The survey had been made by a committee consisting of S. M. Brame, Alexandria, Louisiana, chairman; W. J. Baird, Birmingham, Alabama; S. J. McCallie, Chattanooga, Tennessee; F. S. Elliott, Whitehaven, Tennessee; F. W. Buchholz, Gainesville, Florida; W. B. Kenna, Lexington, Mississippi, and F. L. Ashley, Gastonia, N. C.

The findings of this committee were of such interest that the editor of this column feels justified in reporting on a considerable number of the facts developed by the survey. The complete data of the report covered some thirteen mimeographed pages.

The reports represent the opinions of 838 high schools out of a total of 1184 belonging to the Southern Association. This represents a little more than a seventy per cent response, and it would seem that conclusions based on such a response ought to be fairly representative of the sentiment and opinions of the secondary-school men of the southern states.

In order to avoid a mass of more or less uninteresting figures, the writer has endeavored to tabulate the results in such a way as to give the significant outcomes. To that end we have thought it advisable to express the conclusions in terms of percentages. These percentages are to be in-

terpreted as percentages of the entire number of schools responding:

Schools favoring formulation of standards by the Southern Association: 67%

Schools favoring limit of all games to one per week: 48%

Schools favoring limitation of members to tournaments sponsored by the State Association: 54%

Schools opposing girls' interscholastics: 44%

Schools opposing district and state tournaments for girls: 64%

Schools favoring compulsory membership in state associations: 66%

Schools favoring successful work in three major subjects for eligibility: 68%

Schools favoring four subjects for eligibility: 13%

There was a lot of other data submitted, all dealing with questions of vital interest and importance. Limitation of space, however, necessitates the omission of most of the data from this column, although we think there were some facts that ought to be reported, such as the following:

A very small percentage of the schools favor limiting individual players to one sport; the schools almost universally approve of such a program of athletics as will promote health, citizenship and character and will develop programs for the profitable use of leisure time; there was almost no sentiment in favor of limitation upon state championships, the largest opposition consisting of 34% opposed to state championship in football. Perhaps it is significant that 21% were opposed to state championships even in basketball.

In spite of the fact that 56% of the principals reporting seemed to favor interscholastic competition for girls, yet only 52% of all the schools reporting actually have interscholastic girls' teams in basketball. The percentages in the other sports range much lower.

The study revealed that the average number of games played by the schools participating in football was 8.6, the numbers of games reported from different schools varying all the way from three per season up to fourteen per season, which was reported by a single school. More than 85% of the schools report the organization and maintenance of interscholastic teams in some branch of sport whereas only 65% report the organization and maintenance of intramural teams.

It is a source of interest and gratification to all school men to know that the committee report was approved by the Commission on Secondary Schools and the committee was continued with instructions to report next year on a series of standards and recommendations to be used by the southern association in accrediting secondary schools. A generous appropriation was made to finance the further work of the committee.

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The editor of this column believes that Chairman Brame and his assistants are entitled to great credit for the initiative and energy they displayed in prosecuting the survey and we cannot help thinking that the final outcomes of this investigation and report will amply justify the expense and energy involved.

In the informal discussion which took place at the conference, it was revealed with perfect definiteness that the problems confronting the secondary-school men in the southern states are identical with those which have to be met in other sections of the country. Probably the one outstanding obstacle against which all school men have to contend in the promotion of the educational policies of the schools is the apparent assumption of the lay mind that the general standing of the school and the efficiency of principals and directors of physical education are to be judged by the degree of success in interscholastic athletics. That similar standards prevail with respect to colleges is evidenced by the tremendous activity of college coaches, field secretaries and alumni in soliciting outstanding secondary-school athletes to attend this, that or the other college.

The secretary of the National Federation reported specifically upon three rather widespread activities. These were: (1) The insurance of athletes; (2) The organization of athletic officials under the supervision of state high school athletic associations; (3) The preparation of playing rules for those games in which high school boys participate.

There have been adequate discussions in *Scholastic Coach* relative to the first and third of these activities. With respect to the second the following is approximately what was reported by the secretary:

Within the last few years a large number of states have entered upon the registration and organization of officials who serve as umpires, referees, etc., in interscholastic contests, the purpose being to improve the general character of officiating and to profit by whatever helpful outcomes may be achieved by identifying athletic officials with the state high school athletic associations. The general impression is that a high degree of success is attending these efforts. The systems adopted in the several states display a wide variation in methods of procedure. The general outcomes, however, may be stated as being: (1) A desirable identification of athletic officials with state athletic associations, facilitating emphasis upon the educational aspects of high school sports; (2) A genuine improvement in the character of the officiating provided for our interscholastic games; (3) A still further assumption by the high schools themselves of complete control over interscholastic competition in all of its aspects; (4) Some states openly justify the imposition of a membership fee as a source of income for the state association, since the athletic officials are about the only class of people associated with interscholastic athletics who are assured of some degree of profit without the assumption of any financial responsibilities.

C. W. WHITTEN,
Secretary, N.F.S.H.S.A.A.

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which all basketball players
should know

*Name on request.



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The Physiology of Athletics

Heart and Circulation, 2

Blood Pressure

By Peter V. Karpovich, M. D.

WHEN an artery is cut one can see that although the blood flows in a pulsating manner it is continued all the time. This constancy of the flow depends on the elasticity of the blood vessels. With every contraction of the heart (systole) the blood is forced into the aorta and causes it to expand. During the relaxation of the heart (diastole) the aorta tends to collapse to the normal size and in doing so squeezes the blood and propels it forward. This mechanism is of great importance. It insures a constant blood supply to the organs.

The elasticity of the blood vessels makes the work of the heart easier. Anyone can prove it experimentally by taking two long pieces of tubing, one of glass and another of rubber, and pumping water through them as fast as possible. The quantity of water delivered through the rubber tubing will be larger than through the glass tubing for the same time interval.

When the arteries undergo some pathological changes and become hard, as is frequently the case with old people, the heart will have to exert a greater pressure to balance the increased resistance of the arterial walls. Occasionally we hear and read accounts of some pathetic and tragic accident that takes place on the athletic field or gymnasium when an elderly man, a fine athlete in the past, attempts to show the younger generation "how it should be done." The memories of the past are still strong, but the body is weak. A strenuous exertion suddenly increases the blood pressure and the hardened, brittle blood vessels burst and the man collapses, probably fatally injured.

Blood pressure measurement

The principle of blood pressure measurement is very simple. A rubber bag connected with a pressure gauge and air pump is wrapped around the upper arm. The air is pumped into the bag until the blood-flow through the artery is stopped. The reading taken at that time from the gauge gives the systolic pressure because it corresponds to the maximum pressure which is produced during the systole. Then the minimum pressure which causes a slight compression of the arteries is also measured. This is called diastolic pressure because it corre-

sponds to the least pressure in the arteries and comes during relaxation of the heart.

A stethoscope is employed in order to discover certain murmurs caused by the blood passing through a partially compressed vessel during the systole and diastole, so as to know when the reading should be taken. Blood pressure is expressed in millimeters of mercury.

The widespread notion that blood pressure is equal to one's age plus a hundred is not true. It may be approximately correct in some cases but is essentially wrong. An extensive study conducted by Drs. Alvarez and Stanley showed definitely that there is little difference in the blood pressure between youth and old age. It ranges from 110 to 135mm for systolic, and from 60 to 90mm for diastolic.

Normal versus average pressure

Just as in the case of the pulse rate, every person has his individual normal blood pressure. A person may have a pressure of either 100 or 150-mm and if this is his constant pressure and he is in good health, we may say that this is his normal blood pressure and there is no reason to worry about it. On the other hand, if the pressure suddenly changes it may become abnormal and cause apprehension, although it lies within the average limits.

Interpretation of blood pressure readings. In measuring the blood pressure we find: systolic, diastolic and pulse pressure. The systolic pressure shows the maximum pressure developed during contraction of the heart, diastolic shows the pressure in the arteries during diastole. If we subtract the diastolic from the systolic, the difference is called pulse pressure* because this excess pressure is responsible for the pulse and blood circulation. Not long ago physicians measured the systolic pressure only, but it has been demonstrated clearly that this was insufficient for a good interpretation of the circulatory condition. Suppose we have two men both having a systolic pressure of 145mm. What can we say about them? Practically nothing except that this pressure is "somewhat high." But if one of them

has a diastolic pressure of 90mm and the other one of 120mm, we are able to state immediately that the first man is in a better condition than the second because their pulse pressures are relatively 55mm and 25mm. It is evident that a pressure of 55mm insures a better circulation than a pressure of 25mm.

Blood pressure and body position

Blood pressure adapts itself to the change in body position. Since there is more resistance for the blood circulation in the upright position, one naturally expects a higher pressure in standing than in lying. This assumption has been used as a basis for various tests of physical fitness. Many investigators found so many exceptions to this rule that they are reluctant to consider this as infallible. If a man remains standing at "attention" too long, blood circulation may become inadequate, pressure will fall, and the person will faint. If one gets up from the bed too suddenly he may experience a slight feeling of giddiness. This may be regarded as a result of insufficient blood pressure. When the blood vessels in the abdominal cavity constrict, more blood is sent into circulation, blood pressure increases, and the feeling of giddiness disappears. An athlete should remember that the process of adjustment of the blood circulation, rapid as it may be, requires some time. Imagine basketball players taking time out and lying down flat to rest. How will they feel when the whistle blows and they have to resume the fast game? There will be a certain feeling of awkwardness and even a lack of coordination. This is the reason why a coach will never allow his men to lie down immediately before a strenuous exercise. A sitting position is about all that can be allowed.

Emotions and blood pressure

Dr. Cannon has shown that intensive feelings increase the blood pressure. Anger, fear, and other exciting sensations stimulate the sympathetic system, which in turn causes an increased activity of the adrenal glands. Adrenin, secreted by these glands, has a powerful constricting effect upon the blood vessels. The resistance for circulation increases, hence, the pressure rises. During my research on

*Systolic pressure 120, diastolic 80; pulse pressure (120 minus 80) 40.

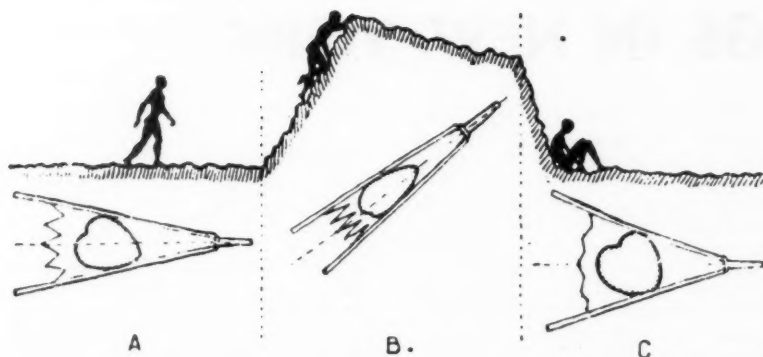


FIG. 1. THE CHANGES IN THE BLOOD PRESSURE IS SUGGESTIVE OF THE SECTION OF THE COUNTRY TRAVERSED.*

physiology of golf, carried on under the auspices of the Burke Foundation, I had occasion to note the action of suppressed anger upon the blood pressure of a golfer. In testing the blood pressure of players who were trying to recover their balls from a sand trap, I noticed that with one novice there was no difference in pressure before the trials and after. Then I ventured to make a few remarks pertaining to his abilities both as a player and as a man in general. The subject gritted his teeth, and after some vigorous strokes sent the ball flying from the trap. Immediately his pressure rose 14mm. I thanked him, apologized, and explained that the insulting remarks were made for the sake of science. I am sure that if the blood pressure of a person were taken during a game of bridge when his partner is trumping his trick, the result would be the same as in my experiments on the golfer.

Heat, causing a relaxation of the blood vessels, lowers the arterial pressure. Cold, on the other hand, causing a constriction, will increase it. Everybody is familiar with the prohibition against plunging into cold water while overheated. Probably we are all guilty of violating this rule, and nothing has happened. Yet there are at least two reasons in support of this rule. First, the sudden cooling of the skin surface may affect the mucous membranes of the nose and sinuses and the "common cold" may develop. The other reason is that the sudden constriction of the blood vessels will unduly increase the work of the heart and may affect a weak heart or weak blood vessels.

I remember how on one occasion I warned a man of sixty-five years not to indulge in morning swims on cold days. The man in question, whose blood pressure was 160, just smiled, thanked me for the advice and kept on swimming. On one particularly cold morning Professor Affleck and I took the blood pressure of this man

as he quietly entered the water. The pressure was 210. After the test the man swam a mile or two and nothing happened, contrary to our expectations. One should make a great allowance for constitutional differences in people.

There has been a great deal of controversy in regard to the blood pressure during physical exercise. The reason for this is the impossibility of measuring the pressure during the work itself and therefore it is measured immediately after the completion of the work. The word "immediately" varies so much with the different investigators that the results obtained are not consistent.

The first reliable information was obtained by Bowen on a stationary bicycle. It was established that the pressure increases with the increase of intensity of work. The increase is almost instantaneous. While hiking in a hilly locality one can get a rough idea of the changes in the arterial blood pressure by looking at the contours of the trail. A graphic representation of the blood pressure will be suggestive of the section of the country traversed (Fig. 1).

While the general blood pressure increases during muscular work, there is a simultaneous dilatation of the blood vessels in the muscles and, therefore, more blood will go to the working muscles. Exercises which involve holding the breath and compression of the chest have an extremely marked effect upon the pressure. Dr. McCurdy of Springfield College has shown that when a subject reached a maximum exertion in lifting, the blood pressure in some cases mounted from 109 normally to 210mm during the lifting. Subsequent x-ray studies showed that there was an actual compression of the heart during such a lifting. This increased pressure in the chest stops the flow of the venous blood to the heart and after a temporary increase in the blood pressure there is a sudden drop to below a hundred. I have even recorded a pressure of below ninety in some subjects who fainted during a similar experiment.

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HOLIDAY MEETINGS IN NEW YORK

THE old business of dealing with the menace of recruiting and subsidization was the most important item on the agenda of the annual meetings of college athletic groups, held over the holidays in New York. Old as it is, this business aroused the college athletic leaders to a higher point of indignation than they have reached in many years. The upshot was the adoption of a code of fair practice by the National Collegiate Athletic Association, an attempt to shame offending universities and colleges into behavior smacking less of the market place and more of the institution of higher learning. Since the N.C.A.A. has no power to enforce the code, its critics point out that it is only lip-service to an ideal, and that colleges will continue as before to hire football players. Others say that the ideal thus expressed is better than no expression whatever, and that it is more likely to restrain colleges in their hunt for football players than it is to encourage them. The code:

1. It is unjustifiable for a student to receive any subsidy of monetary value, either directly or indirectly, primarily for athletic services.
2. It is unjustifiable to employ prospective athletes before they matriculate in an institution or to make advance payment to prospective students for future services or to make any guarantee of payment which is not conditional upon the service being performed in advance of payment or to make any payment for services at a rate greater than the current rate for other students in the institutions.

3. It is unjustifiable to permit a boy to participate in intercollegiate contests who has ever received a loan, scholarship aid, remission of fees or employment primarily because he is an athlete through channels not open to non-athletes equally with athletes.
4. It is unjustifiable for members of athletic or physical education staffs to recruit athletes by initiating correspondence or conversation, or by arranging for interviews with boys who are prospective athletes.

5. It is unjustifiable to promise prospective athletes employment, loans, scholarships or remission of fees except as may be secured by other students through the regular channels of the institution and those channels should be outside the athletic or physical departments.
6. It is unjustifiable for alumni groups, clubs, fraternities or other organizations to make promises of direct or indirect subsidies to prospective students primarily for athletic ability.
7. It is unjustifiable to endeavor to persuade a prospective athlete by offers of scholarships or jobs or by any other means to transfer from a college where he has made application for admission and has been accepted.
8. It is justifiable to permit athletes to work in any department of the university so long as they give full return in work and receive the same rate of pay as is given to other students.
9. It is justifiable for members of the athletic or physical educational staffs in speeches or in response to direct inquiries to point out what they believe to be the educational advantages of the institutions which they represent.

The N.C.A.A. code for controlling the competition for athletes came on the heels of two significant announcements: (1) by Dr. Robert L. Kelly, executive secretary of the Association of American Colleges, which is launching a new investigation into

athletic conditions in colleges. Dr. Kelly said: "We already have sufficient data to indicate that the general athletic scholarship and enrollment situation throughout the nation is one of the worst in American educational history." And (2) by Cornell University Committee on Athletic Control which gave sanction to the practice of soliciting "men with athletic ability, provided only that character and brains remain the primary considerations."

The American Football Coaches Association, the College Physical Education Association and the American Student Health Association, held their meetings in conjunction with the N.C.A.A. convention. Some of the speakers and gems from their speeches:

Gus Dorais—"Coaches should discontinue the practice of picking probable winners for the press."

Walter Okeson—"The growing use of the lateral pass raises several pertinent questions for the rules committee to consider."

Bernie Bierman—"One intercepted pass is worth five passes knocked down." (Lecture on forward-pass defense.)

Harry Kipke—"A good kicking game will keep the score down—if you can get possession of the ball often enough to kick it." (Lecture on kicking.)

William J. Bingham—"Too many boys are being used to go to college to play football and unless this game is made incidental to a college degree we might just as well face the fact that we are doomed."

Francis Schmidt—"The most important factor in lateral passing is timing. The tendency is to make the pass too soon." (Lecture on lateral pass offense.)

Bill Kern—"There are four methods of pulling out of

the line. Have your running linemen perfect one method. A naturally slow man can become a good charger by perfecting his footwork. One of our men (Hartwig, U. of Pittsburgh, guard) is a notable example of the naturally slow man who is as good as the best of them because of his splendid footwork."

Clark Shaughnessy, Jimmy Phelan, Adrian Lindsey, Lloyd Jordan and S. L. Robinson, diagrammed some of the outstanding plays of the season, six of which are reproduced on this page.

Floyd Eastwood, athletic-injury researcher, presented a table showing football fatalities for each year over a four-year period, including the 1934 season. The table:

	1931	1932	1933	1934	4-Yr. Tot.
Sandlot	10	11	8	4	33
Athletic club	3	6	4	3	16
High school	12	12	13	13	50
College	8	3	2	3	16
Totals	33	32	27	23	115

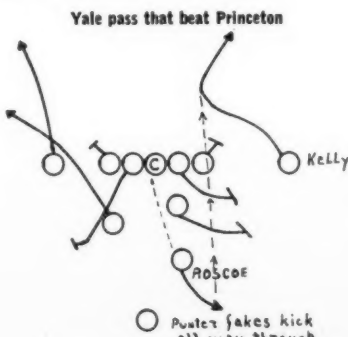
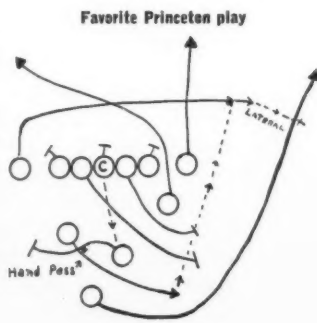
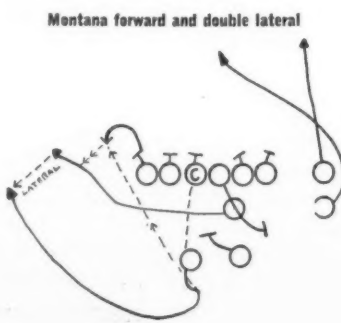
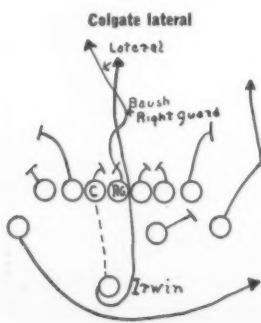
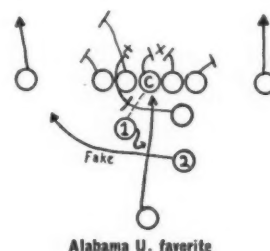
Prof. Eastwood arraigned the high schools for their failure to reduce the death rate in football over the four-year period which his study, made in cooperation with The Associated Press and the National Bureau of Casualty and Surety Underwriters, embraces. As a remedy, Prof. Eastwood recommended a six-point program for high schools to follow. High school men, notably P. F. Neverman of Wisconsin and Floyd A. Rowe of Cleveland, are ready to refute the Eastwood statements as misleading, and some of the points of his recommendations as being out of order. This refutation will appear in the February Scholastic Coach. The Eastwood recommendations follow:

1. An association of high school football coaches to do in high school football what the Football Coaches Association has done for the college sport.
2. Raise the standards for employment of high school coaches, requiring them to have, in addition to football and coaching experience, advanced courses under leading football teachers.

3. Teach a rolling, rather than a head-on, tackle; to block so that the soft parts of the body will be at contact; to tuck in the chin when falling backward after being tackled or blocked, in order to avoid concussion.
4. Provide a thorough physical examination before practice or a game.
5. Provide adequate first-aid facilities on the field of play to decrease deaths from infection.
6. Observe caution in seeing that a player is thoroughly "warmed up" before he is sent into a game.

The American Football Coaches Association submitted for the consideration of the N.C.A.A. Football Rules Committee the following rules changes:

1. Return of goal posts to the goal line.
2. To allow incoming substitutes to communicate at once with teammates.
3. A clarification, where the lateral pass is concerned, of present Rule 7, Section 7, Article A, which defines point where ball is dead as that point where forward progress of carrier is stopped.
4. To permit forward passing from any point behind line of scrimmage.
5. To make it clear that umpire must notify the coach when allotment of times-out has been exhausted.
6. To allow the defensive team to advance with a recovered fumble.
7. To allow any forward pass into end zone, if not completed, to be ruled as simply an incomplete forward pass. At present one such pass is allowed.
8. To rule that the penalty for a second forward pass on any play be inflicted from the point where the foul occurred instead of from the spot of the preceding down. This touches on attempted laterals coming out of forward passes.
9. This also is in respect to lateral passes and suggests that a penalty for a lateral pass which, instead, is a forward pass be also inflicted at the point of foul rather than at the spot of the preceding down.



Straight-Away Basketball

[Continued from page 13]

mations. Diagram 12 (see below) shows a formation devised to teach accuracy in passing and the idea of breaking toward the ball. It is the nearest thing to a panacea for poor passing that the writer has ever seen. Eight players are arranged in two trapezoidal formations on opposite sides of the floor. The boys in the back rows break out by the boys of the front rows, receive the ball and pass directly across the floor, stopping in front of the player left on that side. The boys of the front rows retreat into the positions left vacant, and then advance to meet the ball when their turn comes. It will be noticed that the ball travels in a W formation while the players move in a rough Z. Persistent use of this set-up will improve the passing and breaking of any squad to an appreciable degree.

Diagram 10 (see below) is another formation which will keep eight players busy passing and breaking for the ball. The players revolve along the legs of the big triangles; the ball travels around the hexagon. The passer always goes behind the receiver. The simple formation shown in Diagram 11 (see below) will furnish passing practice and ball handling for

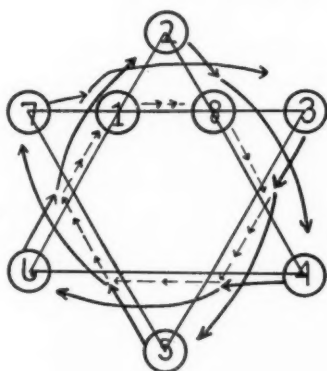
a much greater number of boys. In this particular case the set-up is intended for twenty-two. The inner and outer circles revolve clockwise while the middle one revolves counter-clockwise, thus causing the players to face each other. Two to six balls can be handled by this number of boys depending on the dexterity with which they work. A big portion of the practice session may well be spent in drills particularly if they are designed to improve the technique actually used in the games.

Shuttle defense

Straight-Away defense is based on the same principle as the offense, to wit: keep in position to score when the ball is regained from the opposition. Such a defensive arrangement is necessarily a zone or position type which we shall call the "Shuttle Defense." Against an offense which employs three players outside the scoring area and two within, our players naturally assume a 3-2 formation, shifting to the 3-2 set-up when an extra offensive player moves closer to the basket. Diagram 6 (on page 13) shows the division of the floor area near the opponents' basket and the sections for which each defensive player is responsible. Our players slide or shuttle back and forth in the

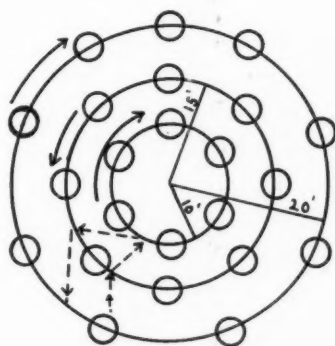
areas designated in the diagram, their movements being determined by the offensive maneuvers. Diagram 7 (on page 13) shows Nos. X5, X1, X3 and X4 shuttling with the offense; the manner of shifting would be similar regardless of what position the offensive players may take. Sometimes it will be necessary for a defensive player to go beyond the areas indicated, but such conditions will occur rather infrequently. To avoid being blocked or screened out by shifting offensive players the defense trades opponents as is shown in Diagram 8 (on page 13). In this case defensive players X1 and X5 trade men, and then X1 and X3 switch to prevent offensive player X5 from getting into the open. On the other side of the floor X2 and X4 have also traded opponents, keeping No. 2 covered after he runs around his screen, No. 4. It is always well to remember that in building any system of offensive or defensive tactics that there is a way for the opposition to offset any advantage that may seem to exist. The defensive set-up described briefly here is not perfect, but it serves its purpose in that it can be changed quickly into an offensive effort. When the ball is regained the offensive players can set sail for the home scoreboard, and that's a big part of the game of basketball whether it is played by rule or by ear.

DIAGRAM 10
Hexagonal Pass Formation



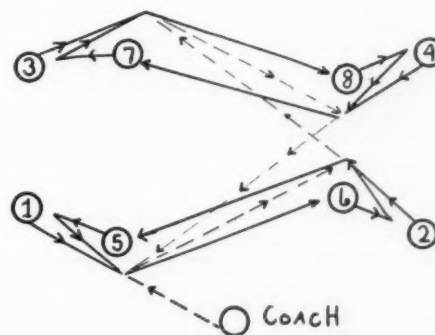
The ball rotates around the hexagon. The players around the big triangles. The ball is passed 1-2-3-4-5-6-7-8, etc. Players 1 and 8 take the positions vacated by 2 and 3 at the beginning of the drill. The passer will always cross behind the receiver. Nos. 1 and 8 may be stationed directly behind 2 and 3 at the outset. This formation will keep eight players busy passing and breaking for the ball.

DIAGRAM 11
Ball-handling Drill



Arrange twenty-two boys as shown and have the inner and outer circles rotate clockwise, the middle circle counter-clockwise. Start with two balls and increase the number to four or five. Instruct the middle circle to pass to the opposite circle from which the ball is received. If space permits the circles may be made larger, more balls thrown in and the number of boys increased. In the beginning place your best passers and ball handlers in the middle circle.

DIAGRAM 12
Poor-passing Panacea



Arrange eight players in trapezoidal formations on opposite sides of the floor, numbering them 1-3-5-7 on one side and 2-4-6-8 on the other. Each player cuts from behind a teammate who immediately drops back into the vacant position. The coach tosses to No. 1 and the rotation is on from 1-2-3-4-5-6-8 2-1-4-3-6-5-8-7 and back to the original 1 to 2, etc. With a few days practice the players should make at least 100 passes at a fast clip without a bobble.

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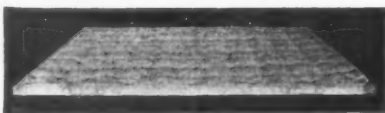
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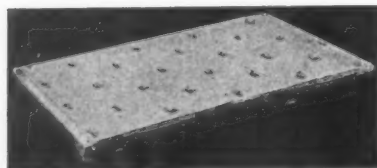
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Building an Offense

[Continued from page 9]

of the pivot man who may be stationed either on the foul line or six to eight feet out from the basket. I believe the latter position is a much more desirable pivot position. The pivot player in this position is closer to the basket and therefore his shots turning either right or left will be much easier to make. A player who can turn and shoot either right or left from this position will give the defense plenty of trouble, especially if he is big and a good ball handler. This boy should be a cool and heady player, for he will have the opportunity to start many scoring plays and will be called upon to make many quick decisions as he receives the ball from his teammates. In describing this offense let me state that we are working against a man-for-man defense for the present.

The ball is received either under the opponents' team's basket or on the side, and a guard takes it from the official. Usually the opposing defense will have dropped back to mid-floor or further; so the guard passes it in to a teammate who either returns to the passer or dribbles down the floor slowly until the defense is met and here the offensive system starts. It is a waste of energy and time to have more than one man advance the ball down the floor when the defense is set in your frontcourt. The two back men, regardless as to what position they are playing (forward, guard or center), line up across from each other facing their basket and try to size up just how the defense is stationed. Diagrams 1, 2, 3 and 4 show players D and E acting as the back men.

[All diagrams mentioned are on pp. 8, 9]

These plays show some pivot-post possibilities. The pivot-post is easy to teach and quite a few variations may be derived from it. Should the defense not drop back it is then best to place the pivot man on the side and bring the forwards out nearer the center of the floor. The ball then can be passed directly from out of bounds to one of these men who will be coming out to meet the pass. If the ball is passed in to the other guard who is being rushed by his forward the pass can be returned to the passer or the guard can fake and dribble and advance rapidly down the floor. Both guards should be clever at faking and dribbling as nothing will defeat a rushing defense easier. With the pivot man on the side the center lane is always open for players to cut through. This is especially advantageous on a small narrow court. There are many good offensive threats from this formation some of which are described in Diagrams 2, 3 and 4.

In drilling on offense we find it good policy to use but half the floor. It is much easier on the boys and localizes the practice and so facilitates corrective work. After all, the modern game is being played in one half the court at a time. Few defenses are daring to play the man-for-man, tag style, all over the court. Man-for-man defenses that attempt this dogging game, even under the ten-second rule, usually come to grief when playing a team of good ball handlers and fast cutters. For

every ball the tag defense intercepts there will be two that the offense will put up to the basket, the culmination of deception, screens and the fast break into scoring territory not adequately guarded (some of the defense being left unceremoniously, and now literally, "tagging" after the offense).

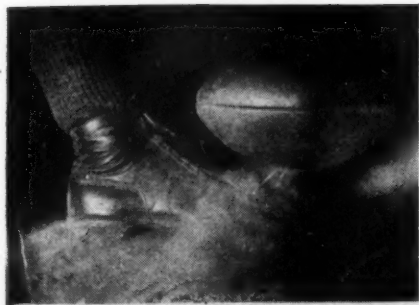
Diagrams 5, 6 and 7 show three out-of-bounds plays, the primary aim of which is not so much to score a basket from the play itself, but to get the offense moving in good order and spread the defense. The opening to shoot must be capitalized the moment it occurs, of course, and this may come after the first pass.

Diagrams 14, 15 and 16 are plays for penetrating a zone defense and the 2-1-2 defense. The strict zone defense will never be successful against a clever ball handling and shooting team. It will work on some very small floors; and, of course, any defense will win from a poor team. Against a 3 and 2 zone defense the ball must be brought up close to the front line and passed rapidly back and forth between the guards in order to get the front line shifting which they will eventually do. Diagrams 14, 15 and 16 show the position of the three front men on offense. No long passes to these men are permitted, consequently it is almost impossible to have a pass intercepted. If the front line goes too far back the guards can take set shots and the two forwards and center follow hard. If the guards play wide the ball can be thrown directly to the man on the pivot. If the basket is not scored on all set shots against a zone defense the worst your team is likely to get is a held ball. You will have three men against their two.

In our weaving offense I favor having the passer go ahead of his receiver. In this position he is in better position to receive a return pass and also is more likely to cause natural pickoffs for his teammates as they swing around behind him. On receiving a return pass the man can dribble in for a shot or he can pivot and return the pass to the passer cutting behind him toward the middle of the floor. The first receiver of the pass always has the chance of returning the pass, dribbling into the basket or passing to a teammate coming out from the corner to meet his pass. When a team has possession of the ball its men should be on the move continuously. Players in motion are unconsciously making openings for their teammates. On all outside balls the play should be started as quickly as possible. If set plays are used the players should line up quickly, but if an opening presents itself for a quick basket the play should be discarded.

Freezing the ball is an important feature of any offense. It is best to freeze the ball without the opponents realizing what you are doing, if possible. As soon as the ball is received it should be passed rapidly but carefully among all members of the team. Every man should move or cut from side to side at times breaking for the basket to draw the defensive man away from the ball and then returning quickly to meet it. Take every caution to prevent bad passes or held balls. Long passes should be reserved strictly for the clearly open teammate cutting for the basket.

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LEFT—WHAT HAPPENS WHEN TOE MEETS PIGSKIN: High speed pictures taken at $1/100,000$ of a second by Prof. Harold E. Edgerton of the Dept. of Electrical Engineering, Massachusetts Institute of Technology, show the indentation caused in a football when it is place-kicked. The ball was inflated with the normal air pressure required by the rules—between $12\frac{1}{2}$ and $13\frac{1}{2}$ pounds. The pictures, reading from the bottom, show the impact of the foot against the ball, causing it to be depressed several inches. The middle picture shows the ball off the ground but not yet off the foot. The top picture shows the ball off the foot. The dust stirred up by the ball's departure is clearly shown.



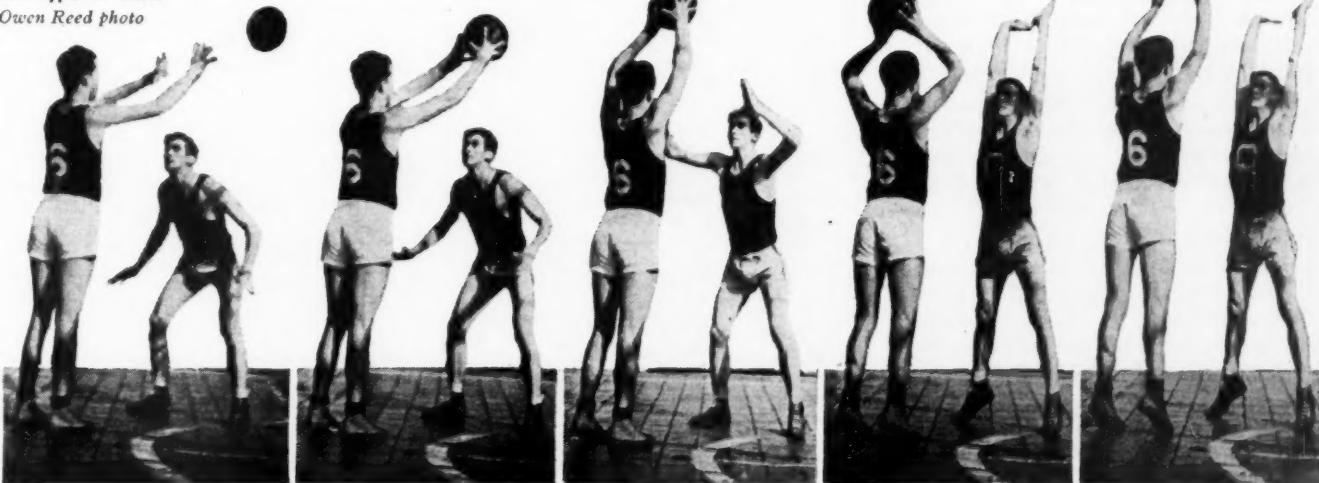
Wide World

ABOVE—WHEN A VEGETARIAN RACES A MEAT-EATER THE RESULT IS A TIE: The finish of a race from Budapest to Rome, a distance of 600 miles, traversed in fifteen days by Matura, the runner on the left, who eats only vegetables; and Kovalso (right), whose training diet consisted of meat.

International News

BELOW—QUICK OUT-OF-BOUNDS PLAY: No. 6, standing near his own free-throw lane, receives a high pass from a teammate out of bounds under the basket. Keeping the ball high after he receives it, No. 6 flips an overhead shot up to the basket. No. 6 must be a tall player and one who can handle this type of shot.

Owen Reed photo



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The Racing Start

[Continued from page 15]

A perfect correlation exists between reaction time from the block and time for the sprint. The runners differ more markedly in this characteristic than in their actual velocity to cover the distance after leaving the blocks.

Milde is a right footed starter, placing his left foot forward and the right one back. He averaged 147 lbs. of force in maximum push from his left foot and 250 lbs. with the right. The right foot was 14" behind the starting line and the left 9". (Illus. IV.)

Physics Applied to the Start. Physically the start requires the acceleration of a body from rest. Inertia must be overcome. The resistance is very great during the

ward angle. This is explained by Newton's reaction law, that a quick forward movement has an opposite backward reaction against the ground. Once started the arm has inertia forward and the sudden checking of it due to the limitation of reach of the arm causes the upper body to be pulled forward slightly.

The angle at which the body is driven out of the holes is very important. The legs may be extended with great force and move with great rapidity but if the angle of application of the force is such as to cause the body to "bound" too high into the air rather than forward, optimum effectiveness is lost. Applied to the start from the "set" position, this principle is illustrated by Illus. V. If the mean force of push is represented in magnitude and direction by line AB drawn through the center of gravity, only a portion of this force acts to push the runner forward.

The amount which is effective for this purpose is represented by line AC. This is greater when the body is inclined forward relatively more as in (b) as compared with (a). Slow motion studies show that this angle is less for faster starters. It gradually increases during the first few steps of the race. The angle should be as far forward as good balance will permit. In (a) the runner is bunched up too close to the line. Less force of extension can be secured in this position which is effective in driving the body forward.

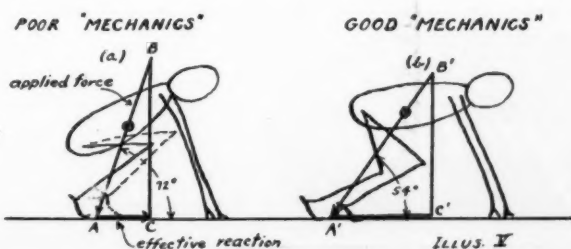
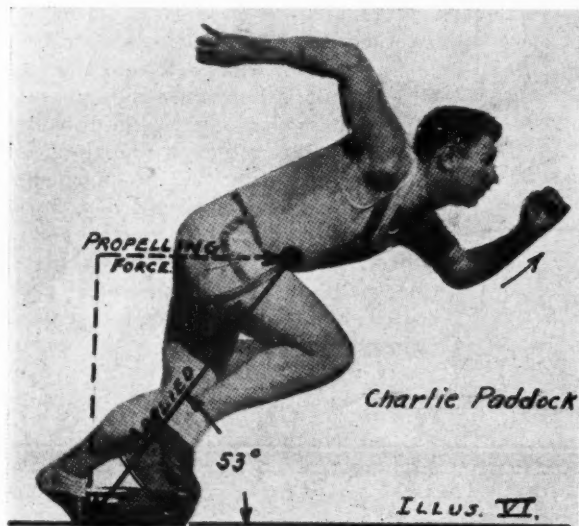
Lifting the body to a more erect position quickly after coming out of the holes causes a loss of efficiency. The forward body lean should be maintained.

Physiological warm-up. A series of observations on Milde showed that in several series of twenty starts that he was faster on starts numbering six to nine. This shows that even though he had put his body through limbering-up exercises, it was not enough to give the fastest starts. When Milde was still an unknown schoolboy the writer saw him defeat a nationally known champion in a cold armory. Milde had "toasted" his muscles against a set of steam pipes just before the race. A. V. Hill states that one of the principal factors acting to slow up body movements under maximum effort is *muscle viscosity*. The fluid part of the muscle acts too much like stiff molasses. It is important to reduce this internal friction of muscles by massage, heat or practicing starts. All three methods are usually employed and most sprinters are particular about keeping their sweat pants on until the last possible moment before a race on a cold day.

start for this reason and the average speed of running the first 20 feet is only one-third roughly of the maximum speed obtained during the sprint. The greatest amount of power is required here just as in starting an automobile from rest. Newton's impulse law $Ft = MV$ holds in projecting the body from the holes. The force of the push times the time that it acts equals the momentum of the body.

It seems reasonable that the pressure should be exerted through both feet, particularly at the very beginning when the resistance due to inertia is greatest. The greater the force, the quicker the body can be accelerated from rest. There is no question but that force can be applied effectively from both feet. Such application is the outstanding feature of the "bullet" start developed by Howard Drew. (Illus. III.) His feet were placed relatively farther behind the line and closer together to permit a more even double application of force.

The use of inertia is important. A vigorous thrust of the right arm forward has the effect of increasing the force of the push of the right leg against the ground and also to pull the upper part of the body forward to maintain the proper for-



Basketball Books

[Continued from page 17]

Frymir, Alice W. *Basketball for Women*. New York: A. S. Barnes and Co., 1928, Pp. 260, illustrated—photographs and diagrams. \$2.

A great deal of work has been done on material in this book which the coach will find of little use. The material is covered in outline form. A good feature of the book is the references at the end of each chapter. A 1928 book that has not been revised, it is, of course, dated in many respects, due to the vast changes in women's basketball during the past two years.

Fish, Marjory E. *The Theory and Technique of Women's Basketball*. New York: D. C. Heath and Company, 1929, Pp. 137; illustrated photographs and diagrams. \$1.75.

This book is written on the basis that basketball is an educational activity in that it contributes to the field of character training and should therefore be an activity for mass participation. The material essential to the coach is briefly described, with the methods of teaching based on psychological principles. Games, using the basketball, are also contained in this book.

Meissner, Wilhelmine E; and Meyers, Elizabeth Yeend. *Modern Girls' Basketball*. New York: Scholastic Coach Bookshop, 1935, pp. 62, illustrated—photographs and diagrams. \$1.

This work is the first on girls' basketball since the revolutionary changes in the game two years ago. It will be published the latter part of January. All phases of the girls' game are covered. The photographs show proper technique of many of the fundamentals. The diagrams give practice drills and formations for team offense and defense.

Basketball Play Situations. Chicago: National Federation of State High School Athletic Association. 1934. Pp. 72. \$1 to non-member schools.

A textbook for the study of the rules and game procedure, edited by H. L. Ray and H. V. Porter. It offers 283 basketball problems and their solutions. This book is issued annually. Schools members of state high school athletic associations in the National Federation may purchase the book at a substantial reduction.

Official Basketball Guide, 1934-35. New York: American Sports Pub. Co., Pp. 220 and detachable rule book. 25 cents.

This is the annual Spalding Guide, containing the new rules, and reviews of basketball from all parts of the country—colleges, high schools, A.A.U., Y.M.C.A. Edited by Oswald Tower, Andover, Mass.

Official Basketball Guide for Women and Girls, 1934-35. New York: American Sports Pub. Co., Pp. 80, and detachable rule book and chart. 25 cents.

This is the annual Women's Guide of the Spalding Library. Besides the rules (bound separately and fitted into special pocket in the volume) the Guide contains special articles on basketball fundamentals, teaching methods, officiating.

Other Basketball Books (Incomplete data).

Bliss, James G. *Basketball*. Philadelphia: Lea & Febiger, 1929. \$2.50.

Barry, J. M. *Basketball, Individual and Team Play*. Iowa City: Clio Press, 1926.

Jones, Ralph. *Basketball from a Coaching Standpoint*. Lake Forest, Ill.

Levis, G. W. *Basketball, Hillyards*. St. Joseph, Mo. 1928.

Martin, W. L. *Shifting Ball Defense*. Winfield, Kans. 1929.

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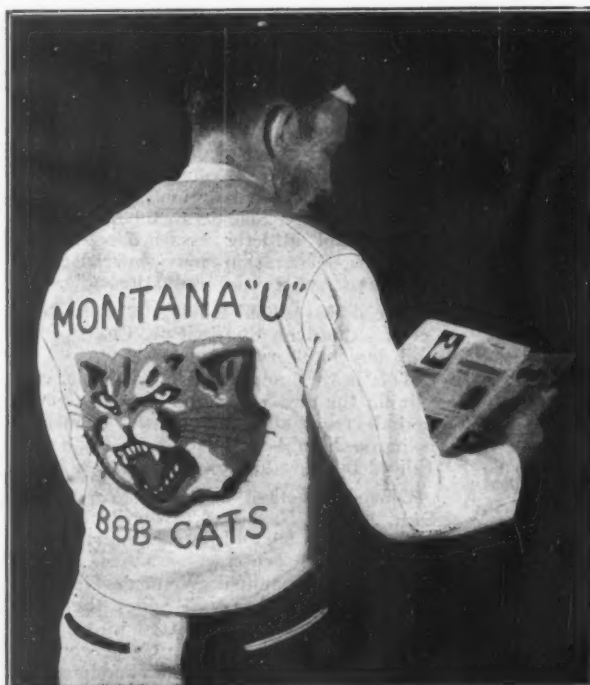
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Care of a Hockey Rink

[Continued from page 10]

curely. Although this is more serviceable, it is still inadequate because it lacks size and coverage in sweeping area. The best broom is one shaped like the broom used by the city street cleaner, but made with somewhat finer straw which catches the smaller particles of snow cut up by the skates. This broom is of the push type and is more efficient because it covers more than twice the sweeping area of the house broom. It has been found that these brooms are very reasonable and durable and only about a dozen are needed to clean off the average rink in a short time.

Another thing which causes a great deal of melting on a hockey rink is the zone lines. These lines absorb the sun's rays and thus melt into the ice to a considerable extent. It is almost impossible to eliminate this local melting completely, although something is gained by painting the lines immediately before the game, and then having them washed off after the game is over. The best paint used is alabastine paint mixed with water and heated. Some schools have found that common bluing mixed with warm water works as well. The narrower the line the less warmth it will attract.



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